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ORIGINAL ARTICLES.

INJURIES OF THE ABDOMEN AND THEIR PROPER TREATMENT.

Read in the Section on Surgery, at the Thirty-Eighth Annual Meeting of the American Medical Association, June, 1887.

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Sir Spencer Wells has said: "abdominal surgery, though not without just claims to the credit of having done good service to humanity, must still be looked upon as a branch of our science and art which, still important, calls for continued search for truth, and for constant efforts to improve methods of practice from every surgical stand-point."

To no branch of abdominal surgery does this statement apply with greater truth than to that pertaining to abdominal wounds. No branch of this subject is receiving larger attention to-day than is this, and in no other is there greater necessity; for in no department of the subject is there so much uncertainty. The subject is being discussed at the meetings of surgical societies and in journals all over the world, and yet, notwithstanding all that has been said, there is still much to be learned, for the subject is only in its infancy, and although operative procedure in these cases meets with much opposition, it will nevertheless, and at no distant day, take its place with ovariotomy as an acknowledged operation.

I do not expect in this paper to add anything new, or to make any suggestions which have not been already offered, but simply to give my experience and add my name to the list of those who have already spoken in favor of operating in these cases, instead of treating them as Dr. Martin, of Hërde, justly remarks by "opium euthanasia."

As to wounds of the abdominal walls, little need be said, as the various text-books treat them so fully as to require no more than a passing notice on my part. From personal experience I am in doubt as to the possibility of a force being applied to the abdominal wall with sufficient violence to produce an inflammation of the peritoneum, *per se*, without rupturing some of the viscera.

If, however, peritonitis should follow such an injury, I would, upon the first indication of inflammation, open the abdomen and keep it thoroughly drained. The success attending this plan of treatment in cases of peritonitis from other causes, I think, fully justifies the procedure.

"The effect of contusions of the abdomen is not always limited to the walls, but extends sometimes to the whole visceral mass, but more commonly to the large solid and fixed viscera—the liver, spleen, and kidneys—and less frequently to the hollow viscera, the stomach, intestines and gall-bladder. Probably all of the organs contained in the abdomen, even the blood-vessels, may be torn or ruptured without the existence of external wounds." Otis reports: Where the solid organs and blood-vessels are wounded by blows or falls on the abdominal walls without penetration, the injury is generally so great as to give the surgeon little chance for rendering aid, the patient rarely recovering from the shock. Hæmorrhage is necessarily great and post-mortems usually show the cavity filled with blood. If, however, the patient should survive the shock and the symptoms indicate surgical interference, I would open the abdomen, and if a bleeding vessel were found, would ligate it; or if the liver were ruptured would control the bleeding either with the thermo-cautery, or a solution of sub-sulphate of iron, or pack it with aseptic gauze, bringing the free end out through the abdominal opening. In case the spleen or either kidney were the organ involved, I would remove them. This operation has been done with sufficient success for other causes than injury, to teach us its possibilities.

As to the pancreas, Senn has said all that can be said in regard to wounds of that organ, and I will not refer to it hereafter in the consideration of the subject.

Up to the present time there has not been a successful case recorded where laparotomy has been done for the relief of intestinal rupture without penetration. The nearest approach to success was the case of J. Croft, of St. Thomas's Hospital, who opened the abdomen of a man, who had been injured twenty-four hours before by his companions jumping upon him and rupturing the bowel. Laparotomy was done shortly afterwards and the bowel fastened to the external opening. The patient survived the first operation, but as he did not gain flesh, and on account of discharges irritating the skin in the neighborhood of the opening, Mr. Croft attempted to close this by resecting and bringing together the divided ends. A month had elapsed since the first operation, but on account of sufficient nourishment not being taken up by the system, the

patient could not withstand the shock of the second operation and died within a few hours.

The uncertainty of diagnosis in these cases is the reason operation is delayed until it is made certain by the advent of peritonitis, and thus many valuable lives are sacrificed, as the following cases that have come under my own observation in the last few months will show.

The first case was that of a hostler who had been kicked in the abdomen, two days before he was brought to the St. Louis Mullanphy Hospital, where I saw him a few hours after his admission. He was moribund and an operation was out of the question. The post-mortem showed the ileum ruptured low down, the peritoneum inflamed, the result of fæcal extravasation. The patient, I feel sure, could have been relieved by an operation; as might also have been the following case—in which I assisted Dr. Gregory—had the operation been done earlier. The patient had fallen about four feet and struck the abdomen across the top round of a ladder. There was considerable shock after the fall, with much pain which steadily increased instead of diminishing. His condition went on from bad to worse until the following Tuesday at noon—three days after the injury—when the abdomen was opened, only as a forlorn hope. A small rent in the intestine was discovered which was closed by the Lembert suture, and the cavity thoroughly cleansed, the abdominal opening closed, and the patient returned to bed, little if any worse for the operation; but he died six hours later.

The symptoms in many of these cases are obscure, and when to operate will always be a question; while in others, as in the following, they are so clear that there cannot be any doubt. In this case the patient was brought to the hospital where I saw him shortly after. He was then collapsed—skin bathed in a cold perspiration, pulse low, vomiting everything taken into the stomach, abdomen much distended, liver dulness diminished, bladder empty, thirst intense. Rupture of the bowel was diagnosed and laparotomy advised in case patient recovered from the shock, which he did not do. Post-mortem showed ileum ruptured about its middle entirely across. Neither the abdominal wall or peritoneum were injured, while the omentum immediately under the site of the injury was bruised, and in places contained extravasated blood.

If called to see a case of non-perforating injury of the abdomen, if the symptoms indicated in any way an injury of the viscera, I would advise immediate operation, and unless I did so, would consider I had not done my duty, as we shall see from tables later on, that exploratory laparotomy is far less fatal than the expectant plan of treatment heretofore adopted in these cases.

As the table of Sir W. MacCormac is more complete than the one I had compiled, I will refer to it. In these tables twelve cases are recorded, all of which were fatal.

The same author has collected sixteen cases of laparotomy for intra-peritoneal rupture of the urinary bladder of which six were successful, and ten failed. These results are certainly encouraging, especially as these cases have been almost universally fatal before the *bold* and *daring* surgeon of the day undertook to save them. Renigald Harrison—"International Ency. of Surgery," Vol. vi. p. 329—says: "Where the rupture has extended into the peritoneal cavity, I cannot find any evidence to warrant the belief that life has ever been saved without the intervention of surgery. In the few cases where recovery has taken place, it has been directly traceable to the aid which nature has received from the surgeon's hand."

The fatality of penetrating abdominal wounds is so generally recognized, that I almost feel like apologizing for referring to it. It has been said that Mr. Abernethy used quaintly to remark that "nature would have nothing to do with these cases, but stood by and shook her head, and left the patient to his hopeless fate." While nature stood appalled by the task before her, man, more daring and venturesome, was not willing to stand by and see his fellow man die without an effort to save him, and fortunately for mankind the introduction of antiseptics into surgery has enabled him to accomplish wonders, and the day is rapidly approaching, if not already here, when the man with a wound penetrating his belly has some chance of being saved.

That the peritoneum may be penetrated with a certain degree of impunity without any very grave consequences, may readily be proved by a reference to the records of our hospitals, (provided the viscera are not injured), and by the few fatal results following exploratory laparotomy, which to-day is a recognized operation. Still it is not a pleasant thing to open the abdomen, even if it is by enlarging an already existing wound, to find there was no cause for so doing.

The question then arises: What are the symptoms which should induce us to advise the operation? Certainly not simply because a body passed through the cavity, for there are many cases on record where different things have passed entirely through the belly without injuring, in the least, any of its contents. The following case is in point, and as I believe it has never been reported will mention it: An old miser, an inmate of the St. Louis Mullanphy Hospital, having concluded he was of no use in this world, determined to get out of it. He had in his possession an old dress sword, such as were worn in the good old times gone by, which he concluded to use in carrying out his purpose. To make the killing sure, he entered into negotiations with a scissors grinder to have it sharpened. But the grinder would not take less than fifteen cents, and the miser would not pay such an extravagant price, the bargain was not closed, and as a consequence the man did not get rid of himself. The weapon was too dull to cut and passed entirely through the cavity without injury to its contents. From this it will be seen that the question as to the viscera being wounded, is not always a matter of certainty, and the propriety of the operation becomes a question.

The following interesting case was related to me by a gentleman in the country, for whose integrity I

LAPAROTOMY FOR GUN-SHOT WOUNDS OF ABDOMEN.

Operator and Reference.	Age and Sex.	Operation.	Time of Operation after Injury.	Condition at Time of Operation.	Organs Involved.	Result.	Remarks.
W. W. Seymore, N. Y. Med. Jour., 1886, xliv, 209.	16. Male.	Lapar., resection of colon, suture of small intestine.	13 hours.	Fair.	Colon, small intestine and mesentery.	Died.	
R. Abbe, Med. News, Nov. 6, 1886.	53. Male.	Lapar., suture intestine and bladder.	6 hours.	Fair.	Small intestine, bladder & mesentery.	Died.	
D. V. Dean, Records St. Louis City Hospital, unpublished.	16. Male.	Lapar., suture of intestine, cleansing of abdominal cavity.	Not given.	Very bad.	Small intestine.	Died.	
F. J. Lutz, St. Louis Cour. Med., Sept., '86.	21. Male.	Lapar, and suture of wounded viscera.	10 hours.	Good.	Small intestine and mesentery.	Died.	
J. B. Hamilton, Journal Am. Med. Ass'n, Aug. 22, 1885.	19. Male.	Lapar. and suture of wounds.	2 hours.	Good.	Colon, small intestine & omentum.	Recovered.	
F. S. Dennis, Medical News, xliii, 10, 1886.	23. Male.	Lapar., cleansing of abdominal cavity.	Not given.	Very bad.	Liver and vessels of liver.	Died.	
Same, Med. News, xliii, 10, 1886.	26. Male.	Lapar., suture of intestine.	Not given.	Fair.	Small intestine and iliac vein.	Died.	
W. T. Bull, N. Y. Med. Jour., Feb. 14, 1885.	22. Male.	Lapar., suture of small intestine.	17 hours.	Not given.	Small intestine.	Recovered.	
Same, Med. News, Nov. 6, 1886.	25. Male.	Lapar., suture of wounded viscera.	2 hours.	Good.	Small intestine, meso-colon.	Recovered.	
Same, Med. News, Nov. 6, 1886.	24. Male.	Lapar., suture of wounded viscera.	6 hours.	Very bad.	Trans. colon and small intestine.	Died.	
H. H. Mudd, not reported.	17. Male.	Lapar., suture of stomach.	3 days.	Good.	Liver and stomach.	Died.	Wound in stomach had entirely closed, extravasation of blood in meso-colon, about 4 inches in breadth, slight peritonitis.
N. B. Carson, St. Louis Courier of Medicine, March, 1887.	25. Male.	Lapar., suture of wounded viscera and resec. of 2½ inches of intestine.	6 hours.	Good.	Small intestine and mesentery.	Died.	Operation unsatisfactory on account of inability to cleanse peritoneal cavity. Post-mortem not allowed.
Kocher, British Medical Jour., July, 1884.	14. Male.	Lapar. suture of wound in stomach.	3 hours.	Collapsed.	Stomach.	Recovered.	
R. A. Kinloch, N. C. Med. Jour., 1882, x, 1.	Age not given. Male.	Lapar., suture of wounds	11 hours.	Fair.	Small intestine and mesentery.	Died.	
Same, Trans. Am. Surg. Ass., reported in Am. Med. Ass'n Journal, June 4, 1887.	27. Male.	Lapar., suture of wounds	2 hours.	Fair.	Small intestine and mesentery.	Died.	Post-mortem showed cavity containing some fluid abscess in mesentery.
David Prince, not reported.	30, Male.	Lapar., suture of wound in bowel.	1 hour.	Good.	Ascending colon	Recovered.	Attempt was made to enter abdomen by median line, but old adhesions preventing, the region of ball entrance was chosen; patient was seen recently doing full work. Operation perf'd June 25, 1886.
J. Loyd, British Medical Jour., 1883, 1, 500.	19. Female.	Lapar., and formation of artificial anus.	3 days.	Bad.	Small intestine.	Died.	Post-m. showed mesentery perforat'd and injury of bladder not made out at time of operation.
W. W. Keen, Medical News, May 14, 1887.	18. Female.	Lapar., suture of wounded viscera and nephrectomy.	9 hours.	Fair.	Liver, stomach, intest., sup. mes. vein and kidney.	Died.	Survived 15 days: died of peritonitis due to gangrene of bowel at site of one of the perforations.
C. Kollock, Med. News, April 15, 1887.	15. Male.	Lapar. and suture of wounded intestines.	7 hours.	Fair.	Des'g colon and small intestine.	Recovered.	
W. T. Bull, Med. News, Nov. 6. 1886.	57. Male.	Laparotomy.	8 hours.	Very bad.	Liver.	Died.	Died on the table.
M. Freyer, Deutsche med. Wochenschrift, July 15, 1886.	19. Male.	Abdominal wound enlarged and int. resected outside of cavity.	6 hours.	Collapse.	Small intestine.	Recovered.	
C. K. Briddon, Annals of Surgery, 1887.	Age not given. Female.	Lapar., suture of wounded viscera.	12 hours.	Fair.	Stomach and omentum.	Died.	
E. Andrews, Weekly Med. Rec., Chicago, 1884, x, 441.	Age not given. Male.	Laparotomy.	15 hours.	Good.	Abdominal wall.	Recovered.	
F. W. Parham, N. O. Med. and Surg. Jour., 1886-7, N. S. xiv, 508.	34. Male.	Lapar., suture of wounded viscera.	2 hours.	Shock.	Small intestine, ascending colon and bladder.	Died.	

LAPAROTOMY FOR GUN-SHOT WOUNDS—CONTINUED.

Operator and Reference.	Age and Sex.	Operation.	Time of Operation after Injury.	Condition at Time of Operation.	Organs Involved.	Result.	REMARKS.
F. W. Parham, N. O. Med. and Surg. Jour., 1886–7, N. S. xiv, 508.	22. Male.	Lapar., suture of intest. and ligation of artery.	3 hours.	Shock.	Small intest. & ext. iliac artery.	Died.	
J. McF. Gaston, Med. and Surg. Reporter, Phila., June 12, 1886, p. 739.	30. Male.	Lapar. and cleansing of abdominal cavity.	4 days.	Very bad, owing to diffuse peritonitis.	Abdominal wall.	Died.	
T. G. Richardson, N. O. Med. & Surg. Reporter, 1885, No. 6, N. S. xiii, p. 867.	Age not given. Male.	Lapar., suture of intestine,	9 hours.	Shock,	Small intestine, ascending colon and mesentery.	Died.	
C. A. Jersey, Med. Rec., Oct. 16, 1886.	44. Male.	Lapar., suture of intestine.	20 hours.	Good,	Small intestine and mesentery.	Died.	
M. Pickett, Med. Press, West. N. Y., Buffalo, 1886, 5, 6, 1, 247.	13. Male.	Lapar., exploratory.	Not given.	Good.	Abdominal wall.	Recovered.	
T. Annandale, London Lancet, April 25, 1885.	15. Male.	Lapar. and suture of wounded viscera.	1 hour.	Good.	Small and large intest., rectum, and mesentery.	Died.	
Sebastapoble, reported by M. Tralo in Trans. Méd. de Paris, Jan. 15, 1887.	Not given.	Lapar., suture of intestine.	Not given.	Not given.	Small intestine.	Recovered.	
W. T. Smart, Brit. Med. Journal, 1885, 1, 379.	Age not given. Male.	Laparotomy.	Not given.	Shock.	Liver.	Recovered.	Ball extracted from liver.
A. V. Parks, Chicago Medical Jour. & Ex., 1885, li, 412.	16. Male.	Lapar. and suture of intestine.	22 hours.	Fair.	Small intestine.	Died.	
C. B. Nancrede, Phila. Med. Times, 1886–7, xvii, 7, 158.	Not given.	Lapar., suture of wounded viscera.	Not given.	Fair.	Stomach & duodenum.	Died.	
Vaudens, Plaies d'Arms à Feu, 1836.	Not given.	Enlargem't of wound of entrance and resection of intestine.	Not given.	Not given.	Small intestine.	Died.	Post-mortem showed wound of cæcum with fæcal extravasation
Same, Günther, Operationslehre, Abtheilung iv.	Not given.	Abd'l wound enlarged and intestine sutured.	Not given.	Not given.	Large intestine.	Recovered.	
T. Billroth, Prof. Billroth's Klinik, 1886 (R. von Hacker, reporter).	63. Female.	Lapar., resection of ribs, excision of contused part of stomach and suture of wounds.	32 hours.	Very bad.	Stomach, liver and aorta, and right kidney.	Died.	
A. O. MacKellar, Dec. 26, 1886 (unpublished). Noticed in Lancet, '87, 1, 37.	22. Male.	Lapar., perforation secured by ligatures.	33 hours.	Collapse.	Sigmoid flexure and bruising of small intestine.	Died.	
T. G. Morton, Phila., unpublished.	36. Male.	Lapar., and suture of wounded viscera.	1½ hours.	Good.	Stomach, transverse colon and omentum.	Died.	
Newell, New Brunswick, Brit. Med. Jour., Feb. 25, 1882, 260.	Age not given. Male.	Lapar., gun-wad and pieces of clothing removed from abd'l cavity.	1 day.	Not given.	Small intestine.	Recovered.	
Pirogoff, Langenbeck's Archiv, xxvii, 278.	Age not given. Male.	Lapar., resection of intestine and mesentery.	Not given.	Not given.	Small intestine.	Result doubtful.	Progressed favorably for 4 days, then lost sight of.
Pozzi, Revue de Chirurgie, 1887, 178.	13. Male.	Lapar., partial resection of gut.	8 hours.	Bad.	Small intestine and bladder.	Died.	
A. C. L. Ramsey, Northwest Lancet, 1885, iv, 1887.	7. Male.	Lapar., excision of gut.	6 hours.	Bad.	Duodenum, contusion of colon.	Died.	

will vouch: A woman had the abdomen divided entirely across. There was no doctor in the neighborhood, and the relator's father-in-law, a prominent man of the country, and whose advise was sought on all occasions, was sent for. Realizing the necessity of doing something he invaginated the cut ends of the gut, returned it into the abdomen, and closed the external wound with an ordinary needle and flax thread (home-made). As the relator expressed it, he got the right ends of the bowel into each other, and the patient recovered, living several years, to die of another trouble, not connected in any way with this injury. From this case, if true, the possibilities of abdominal surgery can be seen.

LAPAROTOMY FOR STAB-WOUNDS.

Operator and Reference.	Age and Sex.	Operation.	Time of Operation after Injury.	Condition at Time of Operation.	Organs Involved.	Result.	Remarks.
T. S. Dennis, Medical News, Feb. 27, 1887.	22. Male.	Wound enlarged and intestine sutured outside and returned.		Good.	Small intestine.	Recovered.	
Same, same.	57. Male.	Laparotomy and cleansing of cavity.	3 hours.	Bad.	Abdominal wall.	Recovered.	
Same, same.	25. Male.	Laparotomy and suture of intestine.	24 hours.	Fair.	Small intestine.	Died.	The intestine was perforated through the scrotum.
Same, same.	22. Male.	Laparotomy and suture of intestine.		Fair.	Small intestine.	Died.	
N. B. Carson, St. Louis Courier of Med., xvii, No. 3, 1887, p. 226.	40. Female.	Laparotomy and suture of wounded liver.	36 hours.	Good.	Liver and gall bladder.	Died.	Cause of death, iodoform poisoning morning of 5th day. Post-mort. showed periton'l cavity very nearly normal.
G. B. Thornton, Miss. Valley Monthly.	Age not given. Male.	Laparotomy with resection of intestine.	25 days.	Bad.	Small intestine.	Died.	Post-mortem showed undiscovered wound in bowel.
Wunderlich, N. Y. Med. Jour., 1887, i, 68.	19. Male.	Laparotomy and suture of wound in stomach.			Stomach and diaphragm.	Died.	
I. Grindon, St. Louis Cour. of Medicine.	30. Female.	Excision of intest. and enlargement of abdominal wound.	1 hour.	Good.	Small intestine.	Recovered.	
W. G. Tremaine, Medical News, 1886, xlix, p. 601.	18. Male.	Laparotomy and cleansing of abdominal cavity.	10 hours.	Bad.	Abdominal wall.	Died.	Abdominal wound had been sutured by physic'n who saw the case, and who had also administered 8 grs. opium during the short time patient was under his care, from the effects of which he is supposed to have died, and not as result of last operation.
J. Avery, Med. Age, 1885, i, 11, 412.	Age not given. Male.	Laparotomy and suture of intestine.	7 hours.	Much shock	Small intestine and mesentery.	Recovered.	
E. A. J. Barker, London Lancet, 1886, i, 347.	14. Female.	Abdominal wound enlarged & abd. cleansed.	1½ hours.	Good.	Abdominal wall.	Recovered.	
F. J. Lutz, St. Louis City Hosp. Records, not published.	42. Male.	Laparotomy and cleansing of abdominal cavity.		Good.	Abdominal wall.	Recovered.	
Tuholski, St. Louis City Hospital Records, not reported.	21. Male.	Laparotomy and cleansing of abdominal cavity.		Good.	Abdominal wall.	Recovered.	
D. V. Dean, St. Louis City Hospital, not reported.	32. Male.	Laparotomy and cleansing of abdominal cavity.		Bad.	Abdominal wall.	Died.	Abdominal cavity contained much decomposed blood and serum. Peritonitis.
Same, same.	30. Male.	Laparotomy and cleansing of abdominal cavity.		Good.	Abdominal wall.	Recovered.	
A. C. Dalton, same.		Laparotomy and cleansing of abdominal cavity.			Abdominal wall.		
Baudens, Annals of Surgery, 1886, p. 392.	Not given.	Enlargement of existing wound.			Small intestine.	Died.	Post-mortem showed undiscovered wound in rectum.
G. Tiling, St. Petersburg med. Wochenschrift, 1848, No. 24.	19. Male.	Laparotomy and suture of wounds of stomach and intestine.		Fair.	Stomach, intest. and omentum.	Recovered.	
J. G. Brooks, Medical Herald, 1886, vol. viii, p. 134.	11. Male.	Laparotomy and ligation of vessels.	A few hours	Great shock	Abdominal wall and mesentery.	Recovered.	
Kwiecinski, Przegl. lek. Krakau, 1885, xxiv, 71.	20. Male.	Laparotomy and suture of wounds in intestines.	1 hour.	Fair.	Small intestine.	Recovered.	
W. O. Roberts, Kentucky, Am. Practice, 1884, xxix, 13.	54. Male.	Suture of wounds in intestine & mesentery. enlargem't of abd'l wound.		Good.	Small intestine and mesentery.	Recovered.	
J. B. Roberts, Phila. Polyc., 1886, iii, 93.	19. Male.	Laparotomy and suture of wound in bowel.	2 hours.	Very bad.	Small intestine.	Died.	Post-m. showed one wound in bowel overlooked.
J. B. Deaver, unpublished.	Adult.	Excision of spleen.		Great shock	Spleen.	Died.	Post-mortem showed wound of kidney, etc.
Jobert, Günther, Operationslehre.	23. Male.	Enlargement of abdominal wound and suture of bowel.			Small intestine.	Died.	

LAPAROTOMY FOR STAB-WOUNDS—CONTINUED.

Operator and Reference.	Age and Sex.	Operation.	Time of Operation after Injury.	Condition at Time of Operation.	Organs Involved.	Result.	REMARKS.
T. G. Morton, unpublished.	30. Male.	Lapar., suture of omentum, ligature of bleeding omental artery.	9 hours.	Increasing pain about wound, emphysema, no shock.	Wound of omentum.	Recovered.	
J. B. Roberts, unpublished.	40. Male.	Laparotomy, wounds all closed with Lembert's suture.	45 minutes.	Violent abd. pain, free hæmorrhage	Small intestine, colon and mes.	Recovered.	
Davids, Günther, Operationslehre, Abtheilung iv, 163.	Not given.	Enlargement of abd'l wound, gut sutured.			Small intestine.	Recovered.	Gored by ox. Subsequently ventral hernia form'd in scar.
Gal, Centralblatt f. Chirurg., 1886, 686.	45. Male.	Enlarging abd'l wound.	9 hours.	Good.	Abdominal wall.	Recovered.	Gored by a cow.

The following interesting case occurred in my practice and is of especial interest, on account of its involving the medico-legal point, as to the propriety of operating in cases where the lives of two persons are involved instead of one. As a matter of opinion, I think the interest of the second party should not be considered, as by his own act he forfeits all rights in that direction.

I first saw this case—a woman about 40 years of age—thirty-two or three hours after she had been stabbed by her husband. She was then somewhat under the influence of morphine. Her condition, however, was good, the only indication of serious trouble was an occasional intermission of the pulse, which, however, was of good volume, etc. The abdomen was painful on pressure and somewhat distended. From the history of the case I learned that the patient had been accustomed to taking stimulants rather freely—that at the time of the injury there had been considerable shock, from which she had readily recovered. I found upon examination, a knife wound three-fourths of an inch in length, entering the cavity about an inch and a half below the margin of the ribs, and two inches to the right of the medium line. It was supposed the knife had entered the transverse colon. Laparotomy was advised and assented to by both herself and children. As the surroundings were very unfavorable, I had her removed to the hospital, not very far distant, where, thirty-six hours after the receipt of the injury, I opened the abdomen, and instead of an intestine, I found the liver had been penetrated, and the further progress of the knife stopped by a stone which entirely filled the gall-bladder.

The toilette of the peritoneum was carefully made and a drainage tube introduced at the lower angle of the wound. Everything went on well until the evening of the third day when symptoms of iodoform poisoning set in, and she died on the morning of the fifth day. The post-mortem examination showed the peritoneal cavity as nearly normal as possible, under the circumstances. The left ventricle and arch of the aorta contained old well-organized blood-clots. The liver was perfectly healthy in appearance. The post-mortem was not completed as the coroner did not think it necessary.

I am at a loss to account for the bile that was found, as the stone certainly filled the gall-bladder, and at the point of perforation was firmly adhered to the mucous membrane, nor were the belt ducts enlarged to indicate an engorgment of the liver. I think, had the iodoform not been used the patient would have recovered.

From all sources I have collected twenty-eight cases wherein the abdomen has been opened for penetrating wounds. Of these sixteen recovered, eleven died, and one, undecided, died on the third day. Of this number eight involved the abdomen only, with five recovered, two deaths and one undecided. Of the deaths one was evidently due to opium poisoning, of which the patient had been given 8 grains in a short time by the physician who saw him first. In the other case peritonitis had already set in, and the patient was in a bad condition at the time of operation. Of the remaining nineteen cases all had wounds involving one or more of the viscera. Of this number ten recovered and nine died; a showing very decidedly in favor of laparotomy, as it is evident from the nature of the wounds and the parts involved, many, if not all, would have died had nature been left to care for them.

The great mortality attending gun-shot wounds can never be overcome, but I believe these cases need not remain as they have been in the past—beyond hope.

Hunter McGuire places the mortality in this injury at more than nine out of ten. The records of cases as far as I have been able to examine them verify this estimate. I have not found a case of gun-shot wound involving the small intestines wherein death did not result. When the stomach is the organ involved the patient has more chance of recovery, but such chances are so very few as compared with the unfortunate ones as hardly to be worth considering.

In every case of gun-shot wounds of the intestines, says Park, where there was extravasation of the intestinal contents, death was the result, unless the

cavity was cleansed; and the opening of the abdomen is the only means we have to accomplish that end. But how are we to decide when to open the abdomen, as the symptoms are not always plain in these cases, as the following that have come under my personal observation demonstrated.

In the first case I saw—three hours after the injury—there were then no symptoms that would enable us to say that the abdomen had been penetrated. As there was no shock, the pulse was regular and full—the abdomen nearly normal, and except the hole of entrance, showed nothing to indicate any serious injury underneath. His expression was good and he complained of little or no pain (there had been no shock). As the surroundings were bad I had him removed a distance of three miles to the hospital. Upon his arrival there, two hours later, his condition had changed little if at all. A careful examination showed occasional loss of a beat in the pulse—a symptom I have almost invariably found when any of the important abdominal viscera are wounded—otherwise it was very good—voice strong, expression good, abdominal percussion showed slight increase in the resonance, except to the right of the umbilicus over a space about as broad as the hand where it was dull—almost flat. The abdomen was opened six hours after the receipt of the injury, and the intestines found to have been perforated eight times—once at the mesenteric border. Two and a half inches of the bowel had to be resected in one place on account of the laceration of the parts. In the remaining perforations the edges were pared and the opening closed with Lembert sutures. The cleansing of the cavity was not satisfactory on account of a portion of the intestine being adherent to the lower part of the abdomen; its great depth and the rigidity of the abdominal muscles. The patient survived the operation three days, dying of septic peritonitis. No post-mortem was allowed.

Another case, one which I saw in consultation with Dr. Mudd, was one also which presented few symptoms to indicate that the abdomen had been entered and important viscera wounded.

A young man, 17 years of age, accidently shot himself with a small target rifle, just above the umbilicus. When I saw him with Dr. Mudd, three days after the accident, there were really no bad symptoms, unless it was that the pulse, every little while, lost a beat. The abdomen was tender but very little distended. Laparotomy was advised and consented to by the father, who is one of our leading physicians.

The reasons for advising the operation were the belief that the ball had penetrated some of the viscera, and that there were missing pieces of clothing; and also a beginning peritonitis.

Upon opening into the cavity a wound in the liver was found, as was also the wound of entrance of the ball into the stomach, but not that of exit. There were no evidences of extravasation. The stomach wound had healed. The trans-colon was much distended, and showed symptoms of beginning inflammation, as did also the peritoneum generally.

In this case the operation probably did harm instead of good, for I believe had the operation been left undone the patient's chances for recovery would have been better, although I have doubts as to the result being different.

As to there being any symptoms or rules to guide us in our selection of cases for operation, I do not believe they exist in any definite form, and each case has to be decided upon its own merits. I do, however, firmly believe that the day is not far distant when the great majority of these cases will reach the surgeon much sooner after the receipt of the injury, than they now do, and that a fair per cent. of recoveries will be the result.

From all sources I have collected forty-four cases of gun-shot wounds, for the relief of which laparotomy was done, with thirteen recoveries, thirty deaths and one doubtful. This is certainly a favorable showing as compared with the let alone plan.

Finally, I will refer to the excellent paper of F. S. Dennis and to his conclusions, as containing sound principles which should guide us in the selection of cases for operations.

I wish to acknowledge my indebtedness to the tables of Sir W. MacCormac for several cases not reported elsewhere.

LAPAROTOMY AS A CURE FOR TUBERCULOSIS OF THE PERITONEUM.

Read before the Section of Obstetrics and Gynecology, at the Thirty-Eighth Annual Meeting of the American Medical Association, June, 1887.

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The subject of this paper is well illustrated by the detail of the following case:

Mrs. C., æt. 28 years, 4 years married, the mother of one child 1 year old; of medium size, light blonde, sought my advice for swelling of the abdomen, which she supposed to be a tumor. She had noticed a gradually advancing enlargement for about two months. On examination fluctuation was marked but diffuse, extending in an evident wave over the abdomen with the patient upon her back. In this position the abdomen was flat and bulging on either flank, with protrusion of the umbilicus. In this position, also, the area of percussion dulness corresponded to the extent of lateral fulness, while the umbilical region was clear, down nearly to the hypogastrium. On changing her position to the side, the upper flank became clear on percussion, while the region of dulness was transferred to the lower side on a line nearly to the level of the umbilicus. On reversing the position the regions of dulness and clearness changed sides. The examination of the pelvic organs gave negative evidence. The uterus approximated the normal in size and position; the organ was freely movable, and was not affected by abdominal manipulation except by the percussion wave, which could be felt in the vaginal cul-de-sacs. The region of the liver was free from tenderness and

gave a normal outline on percussion. The temperature was normal, the appetite fair; there was no cough, while the lungs offered no suspicion of disease. She complained of indigestion and a tendency to looseness of the bowels with flatulency. The urine was stated by the patient to be normal in amount. The specific gravity was 1019, acid and free from albumen. The patient was slightly falling off in flesh. There was no œdema of the feet or eyelids.

There was but one diagnosis to be made—that of ascites; but there was no evident cause of the peritoneal effusion. She was placed upon tonics and diuretics and sent home. She was seen at intervals of two or three months. There was no change other than in a slow increase of the ascites and in the loss of weight. In the early spring she had a troublesome cough which lasted five or six weeks, but abated by the use of simple remedies.

Nothing further was seen of the patient until late in the fall of the same year. A complete change was then observed in the condition of the abdomen. The outline had lost the character of free fluid effusion, the flatness and bulging of the flanks had disappeared and the abdomen become prominent and rounded. The area of percussion dulness had changed from the central region to the loins. By deep palpation in the right iliac space an irregular hardened mass could be detected, and an induration of apparently the same size and character near the right hypochondriac region. The wave of fluctuation was limited by the line of dulness at the epigastrium and at the flanks. The uterus seemed free from any connection with the abdominal masses and was in a fairly normal position. The umbilicus was yet protuberant.

I was in great doubt as to the state of affairs. The was no cough or hectic, the temperature was about normal; she had wasted considerably, the face was pinched and the expression such as seen with ovarian cystoma, not like that observed in malignant disease of the pelvic or abdominal organs. The urine free from albumen. The feet were slightly œdematous. I abandoned the former diagnosis, but without offering a positive substitute, advised further delay.

In March, 1886, respiration being difficult from pressure, and the abdomen painful, she was admitted to the Central New York Hospital for Women for the purpose of aspirating the abdominal fluid. She was anxious for an operation, as she believed that she had a tumor, but I could not divest my mind of my first impression, and refused to operate in any other way than by aspiration. We succeeded in removing only about a quart of straw-colored fluid, which did not materially reduce her size. The fluid coagulated by boiling but not by standing, and the rather firm coagulum broke up into flocculent masses by excess of acetic acid. It was not examined microscopically, which is to be regretted, as I believe important facts may be had by such an examination of the fluid in these cases.

On June 10, 1886, she was again admitted to have her theory of the case acted upon, as I consented to operate. I must confess that I had been gradually coming over to her view of the case, and now believed that the former ascites was masked by the subsequent development of an ovarian cyst. I invited in Dr. H. D. Didama to see her. He gave her a careful examination, and while not positive, favored the operation of an ovarian cyst, and advised an exploratory incision.

The next day I operated in the presence of Drs. Didama, Totman, and the House Surgeon, Dr. Adams. I made an incision about 5 inches long, fully expecting to come upon a cyst, but on reaching the peritoneum no separation could be made between it and what what ought to correspond to a cyst wall, and yet what we regard as peritoneum was enormously thick. I carefully worked my way through it and was rewarded by a jet of fluid from what appeared to be a cyst cavity. The incision was enlarged to the full extent of the external wound, the patient turned upon her side and the cavity emptied. Some further attempts were made to separate a cyst wall from the peritoneum, but it only resulted in tearing the peritoneum from the abdominal wall. The idea of a cyst was abandoned and we confined our efforts to find out the nature of the case. By inserting the hand a mass was brought into view which was so thickened and matted together that it was with difficulty recognized as intestine. The peritoneum was rolled out and found to be studded with a great number of tubercles, from the size of a millet seed to that of a buck-shot; some of them white, others yellow. The intestines were everywhere beset with them. The transverse colon, thickened and covered with tubercles, was adherent to the peritoneum from side to side, thus enclosing the cavity and giving to the fluid the appearance of being confined within the walls of the cyst.

This ended the operation. The cavity was carefully sponged out with warm corrosive sublimate solution (1–5,000), and the wound brought together, dressed with iodoform and dry absorbent cotton.

The temperature never exceeded 100° and she made an exceedingly quick recovery. Before the sutures were removed there was a great change in her appearance; her demand for food greatly increased, color returned to her cheeks, and before she left the hospital in three weeks had gained about ten pounds of flesh. She went on gaining, and in three months was a strong, robust woman, and at this time, June, 1887, remains so. None of the iodoform entered the abdominal cavity.

If this were an exceptional case it would possess no merit worthy of record; but in the light of recent knowledge it must be regarded of value as a matter of accumulated experience. Other cases of tuberculosis of the peritoneum and of the abdominal viscera appeared to undergo a remarkable amendment or apparent cure directly after the performance of laparotomy. This has been observed sufficiently often to regard it as a possible sequence. Why there is an arrest of progressive tubercularization after laparotomy it is difficult to say. We know too little about the tubercular forces to begin with to predicate upon it any well defined explanation; in the

next place, there is total lack of precision in the method. We may say that there is no operator of laparotomy for tuberculosis known to-day; we simply know that it has happened in a discursive way, as a result of errors of diagnosis, as Hegar says. Concerning laparotomy itself there is some confusion.

At the first meeting of the German Gynæcological Society last summer the subject came up in an irregular way in the discussion of a paper by Elischer on the use of iodoform in severe laparotomies. Dr. Frommel had used the drug in two cases of tubercular peritonitis and in another case of ovarian tumor with ascites, with small papillæ all over the peritoneum. Hirschberg had cured peritonitis with tubercular nodules by corrosive sublimate, hence iodoform was not necessary. Dr. Meinert agreed with the last speaker as far as iodoform was concerned, and threw doubt upon the sublimate, as a like result may be obtained by incision and tapping. Dr. Olshausen had seen it cured by incision, and threw doubt upon all that had been said before, by stating what we all know, that it may seem to get well of itself or remain stationary for years. Dr. Saexinger gave curative value to laparotomy. Dr. Battlehuer had seen the same result follow tapping; finally, Dr. Frommel, who had introduced this subject into the discussion, disclaimed that he had recommended iodoform as a specific for these cases.

The credit of collecting the large mass of material relating to genital tuberculosis in general and to this phase of the subject in particular, belongs to Hegar.[1] He reports two cases which were either cured or rendered stationary by laparotomy, another case of apparent arrest in which nothing special was done, and a laparotomy in a fourth case too recent to give results.

Spencer Wells[2] has had a like experience. Koenig[3] reports a seeming cure, to the date of the report, using iodoform in the toilet of the peritoneum. Neumann[4] had two cases. Hegar[5] throws doubt upon the diagnosis of one of these cases, in which the woman remained well after an interval of eight years. Poten mentions a case operated upon by Hartwig, of Hanover. This subject seems to be, from the description, identical with my own. A small portion of the peritoneum was excised and the diagnosis verified by examination. Numerous miliary, granular and larger growths beset the membrane, which had lost its normal appearance. Under the microscope a variety ranging from granular nodules to giant cell formation with cheesy masses were observed. Bacilli were found located in the giant cell masses. Ulceration was nowhere observed. This case was characterized by slightly elevated evening temperature, but the tubercular process was not detected in any other organ. One year after the operation the patient was well, with a great gain in flesh.[6] Lindfors records a case of apparent cure. In this instance there was no mistake in diagnosis, but a cyst was present, complicated by tuberculosis of the internal genitalia and peritoneum, the removal of which appeared too difficult to attempt. This part of the operation was abandoned. The abdominal incision seemed to render the tuberculosis stationary. The case was not characterized by either amenorrhœa or high temperature.[7]

Upon this brief history of laparotomy in its relation to tuberculosis of the peritoneum we may base a reasonable hope that in selected cases the operation may prove a bar to the progress of the disease, or if this is a too hopeful view of the matter, then for a period at least to afford the patient a fair degree of health and comfort. It still further enlarges the field for exploratory laparotomy, and if the secret history of the operation could be written it would doubtless furnish a numerous array of cases in which similar results had, to the surprise of the operator, been reached. It is safe to assume that opening the abdomen in instances of tubercular degeneration of its lining membrane is comparatively free from danger, and in view of its possible benefit amply justified. Advanced tuberculosis of the internal genitalia and of the peritoneum has about it an appearance of malignancy that would forbid the operation were it not for the hope that the tubercular process might be rendered stationary, as a fatal result frequently follows exploratory incision in sarcoma or papilloma.

In what way laparotomy tends to localize the tubercular process or render it stationary, or probably cure it, we are not in a position to say. We may, however, in an oblique way throw some light upon the method. In the form of tuberculosis to which we have particular reference there is a modified and peculiar form of inflammation, characterized by serous and plastic exudates, which opening the peritoneal sac may have a tendency to arrest, as a series of experiments in the surgical treatment of peritonitis now being made by various surgeons prove.[8] The ascitic accumulation may, and probably does, prove an additional source of irritation, as we have already seen, in the debate before the German Gynæcological Society, that aspiration or tapping equally with laparotomy has been known to result in apparent cure. Distension by the accumulation, aside from the irritating quality of its constituents, may act in a twofold way to intensify the morbid process: mechanically by pressure, or as affording a medium for the distribution of the tubercular germs. Bacilli may be found in the fluid, just as giant and polynucleated cells may be seen in the ascites of sarcoma. "It is probable that these liberated cells graft themselves on the peritoneum and pass through the diaphragm into the pleura. They behave just as we have seen bacteria do."[9] The explanation may exist in thorough evacuation of the fluid. If this be true we see why tapping, equally with other methods, acts as a cure; and if true, drainage through a large opening and a thorough toilet of the cavity must be the better way. We may trace the process a few steps

[1] Die Entstehung, Diagnose u. chirurgische Behandlung d. Genitaltuberkulose des Weibes. Stuttgart, 1886.
[2] Diagnosis and Surgical Treatment of Abdominal Tumors. Lond., 1885, p. 210.
[3] Centralblatt für Chirurgie, 1884, No. 44.
[4] Centralblatt für Gynäkologie, 1886.
[5] Die Entstehung, etc., p. 7.
[6] Centralblatt für Gynäkologie, 1887, No. 3, p. 33.
[7] Centralblatt für Gynäkologie, No. 10, 1886.
[8] M. Heitler. Pittsburg Med. Rev., ii, 36.
[9] Hart and Barbour. Manual of Gynecology, p. 212.

further. The irritated peritoneum is given rest and allows of a process that belongs *per se* to tuberculosis, namely: the thickening and induration of the surface—an encapsulation—and which Hegar[10] suggests may be a stage in spontaneous cure.

The tubercular nodules do not always break down, but may form hard calcareous masses which remain in this condition indefinitely. Such masses have been found in the peritoneal covering of the tubes.[11] Both these processes, encapsulation and calcification, most probably are favored by the spontaneous absorption of the ascites which has been already noticed, or by its evacuation.

One further reference to the natural history of tuberculosis need detain us but a moment. When local it has been observed to undergo, without treatment either general or special, a so-called spontaneous cure,[12] or in other words has become dormant, and may so remain for years. Rokitansky, quoted by Hegar,[13] says this is very rare. If tuberculosis was proved to exist in other parts such instances of unalterable localization are not known in literature. Spontaneous so-called cures are more common in men in whom the disease does not so readily extend to the peritoneum, but is more disposed to remain localized at the site of the initial lesion in the genitals than in women, as in the latter there is open communication between the peritoneum and the genitals, a region that in both sexes shows a marked tendency to initial infection; whence its easy transmission to the peritoneum, pleura and lungs as I have already shown. When the newly formed products are in a condition of encapsulation, calcification, or caseous metamorphoses with absorption of effusion, the stand still ends as a rule by the eruption of the disease in other organs with fatal results, or by an intensified removal of the outbreak in the peritoneum. As an element to give uncertainty to the effect of surgical treatment when followed by arrest of local symptoms of the disease in women, spontaneous cure may be considered of very doubtful value.

It will be interesting to review briefly the form of tuberculosis of the peritoneum in which laparotomy may be expected to give the best results. Kaulich,[14] in an elaborate study of the disease when confined to the peritoneum, divides it into three groups. The first we may call the acute form, which advances by a series of attacks with pyrexia with intervening lulls, until the entire abdomen has been attacked, without effusion but with retraction of the abdominal walls. There is no record of surgical treatment of this group, nor would it naturally fall under the observation of the laparotomist. The second group is defined by an insidious invasion, slow and even advance without pyrexia, and with ascites as a leading and early trait, and unless we find evidences of consolidation at the apices of the lungs, which is often wanting, exceedingly difficult of diagnosis. Our case belongs to this second group; and it is here that surgical treatment will offer its best results. In this class also we get the apparent spontaneous cure, for Kaulich's third group is composed of the second which affords the phenomenon of decrease of effusion with general improvement, but only for a longer or shorter time. If cases belonging to this second group can be brought under treatment before the secondary lung invasion, and the disease thus attacked midway in its advance from the genitalia to the respiratory organs we have an ideally typical case for laparotomy.

We may go with surgical treatment much further than the second group as defined by my typical case. Nodular masses may develop on the tubes and consolidate within the folds of the broad ligaments into fixed and irregular tumors, or the tubes may form elongated, round, uneven masses, but without the even circumscribed swelling of pyosalpinx. Another form of tube infection is when broad ligaments, ovaries and tubes are consolidated into one mass in connection with a wide extension of miliary peritonitis. Here Hegar, except in cases in which other and vital organs are involved, would advise salpingotomy and castration. The uterus must be dealt with separately per vaginam with the curett, or caustics and iodoform, although Hegar treated one extraperitoneally. The treatment by laporotomy offers some special difficulties that would not be met with in pyosalpinx. The extirpation of the tubes is difficult owing to vascular and close adhesions and the arrest of hæmorrhage uncertain. The tubes are involved in the posterior fold of the broad ligament and Hegar cautions against breaking through to reach them as it would probably result in irrepressible hæmorrhage. Of course such extensive breaking down of vascular adhesions implies drainage in the after treatment. It is doubtful if in such cases salpingotomy will meet with general favor. Hegar's results are none too favorable to warrant such severe measures in search of a problematical cure. He had one direct death, the third case developed secondary lung infection, the fourth and fifth cases also. It will be a revival of all the hot discussions over total uterine extirpation in epithelioma with the same complication of after history.

Briefly in conclusion, an analysis of my own case with a view to diagnosis will prove useful. Let us consider the first symptoms that induced the patient to seek medical advice—the ascites. Reasoning by exclusion the range of inquiry is not a wide one. The face being free from œdema the kidneys are, as a rule excluded. As a matter of fact they were healthy. The heart exhibited no error, nor would the ascites point to any heart lesion. The accumulation belongs properly to disease of the liver, as the lower extremities are free from œdema, the complexion, the evacuations, and the freedom of the hepatic space from pain, tenderness or enlargement prove that this organ is not the source of the effusion. Examining the pelvis we observe the uterus to be in approximately a normal position and mobility; the vaginal vault free from tenderness, nodes or tumors, and on external palpation we find this true of the pelvic spaces generally. We have thus eliminated

[10] Loc. cit., p. 7.
[11] Kiwisch. Die Krankheiten d. weiblichen Sexualorgane, third ed., p. 231.
[12] Geil, Ueber Tuberkulose d. weib. Genitalien.
[13] Loc. cit, p 8.
[14] Klinische Beiträge zur Lehre von der periton. Tuberkulose, Prag. Viertelj, ii. 36.

benign cysts or tumors, sarcoma and other malignant diseases of the pelvis and abdomen as a source of the effusion. Speaking with a due regard for the anomalism of disease we have only peritonitis left to explain the phenomenon, but the absence of febrile antecedents shows that it can be no ordinary form while the freedom of the lungs from any indication of tubercles simply renders uncertain what with this indication would be a fairly clear case. Nothing is added to this history for months except occasional abdominal pain due to meteorism and pulmonary irritation which was self-limited, and a gradual wasting of the body. Then on examination a state of affairs presents which can reasonably characterize but one thing. The free ascites had become encysted. In the whole range of pelvic and abdominal disease under the conditions named. I know of none that will offer this peculiar anomaly except tubercle of the peritoneum. This disease has one leading trait aside from fluid effusion and that is plastic exudation, hence the former must be followed after a certain interval by the latter with the result of widely encapsulating the effused fluid.

Our case further demonstrates that miliary tuberculosis of the peritoneum may antedate the development of tubercular nodes and tumors upon the ovaries and tubes. It may be that this is the rule and that the latter do not develop upon the pelvic organs except as the result of the evolutions from the stage of effusion to that of the adhesive exudate, and these masses being mainly the result of thickening and adhesions in mass this seems probable. From the attention that the disease will attract, being now but another excuse for laparotomy, points like these will be cleared up.

And lastly, as a positive aid to diagnosis we have the bacilli of tubercle. It may be difficult to find these in the ascitic fluid. Hegar found the bacillus but in the tubercle itself. It would be reasonable to suppose, however, that a careful search would demonstrate its presence in the fluid.

DISCUSSION.

Dr. Charles T. Parkes, of Chicago: The paper just read by Dr. Van de Warker is an admirable one. Admirable in the description of the case related and upon which it is based, replete with pathological considerations of the subject discussed, complete in its collection of authorities, and just and reasonable in the deductions presented. It is hardly possible that any of us have much experience from which to draw any conclusions for the cases of tuberculous peritonitis that have been subjected to this treatment are rare, so that the procedure so far as results go, is still on trial. Some cases reported certainly seem to establish the supposition that laparotomy has been of more benefit in these cases than simple aspiration. How this effect is brought about by the laparotomy does not seem clear. One experience has happened to me, in which the exploratory incision in a doubtful case, led to the patient's recovery. The patient had been sick many months and came under my care with a large mass in the abdomen which had many of the signs of an ovarian cyst. She was reduced to an extreme condition of debility. The incision showed the peritoneum much thickened and the abdomen free from a cyst, but filled with coagulated lymph. There were no adhesions between folds of the intestines or between them and the abdominal walls. It was removed in large masses by means of the hand and the cavity thoroughly cleaned. A large drainage tube was left in the lower angle of the wound. The patient passed on to complete recovery without any drawbacks. Here was a case in which no matter how erudite the touch, how clear-sighted the inspection or how exclusive the deductions, no proper realization of the patient's condition could possibly have been reached without abdominal section.

The second case was one the exact fac-simile of the case related by the author of the paper. After many months' illness with a gradually increasing ascites the patient came under my care. Careful examination failed to detect any cause for the ascites in the abnormal condition of any of the organs of the chest or abdomen. Aspiration was done and when the fluid was withdrawn several irregular masses could be felt in the abdomen. It was then concluded that the case was one of tuberculous peritonitis. The abdomen refilled rapidly after the aspiration so that in one week it contained as much fluid as ever. It was determined to do an abdominal section and establish permanent drainage. When the abdomen was opened the peritoneum was found universally covered with nodules of small size. The omentum was matted together in one mass of miliary tubercles, the internal genitalia were also covered with the same growths. After emptying the cavity thoroughly and carrying a large drainage tube to the bottom of the cul-de-sac of Douglas, the wound was closed. This was done two days ago and the patient seems not to have suffered any more from this procedure than from the aspiration. The pain of distension is entirely relieved and there has been a very free flow of fluid from the drainage tube. I feel better about this case since hearing the paper.

Several cases of abdominal disease have come under my inspection in which in spite of every care in treatment and the most earnest attempts of good men to reach a clear diagnosis, the cases have gone on suffering for months and years and finally an abdominal section has shown a disease which could be removed and the patient cured. One cannot say that because a patient has tuberculous peritonitis a laparotomy should be done with the belief that a cure will result. Still I am convinced that the section promises more prolonged relief for the patient than can be expected from aspiration. I am heartily in accord with the deductions of the paper.

Dr. E. P. Murdock, of Chicago: I was very much pleased with this paper and especially with the histories given by Dr. Parkes, but I must say that the opposition side may as well be given, inasmuch as I call to mind two cases which came under my observation that did not terminate so well. The first case presented a history similar to the last recited by Dr. Parkes and was almost identical with the case cited in the paper, in which there was a slow accumulation

of ascitic fluid until the abdomen became much distended. Finally she came under the care of a very prominent professor in this city who under a mistaken diagnosis performed laparotomy, emptying the cavity completely. The patient recovered from the operation but the abdomen filled again just as bad as before. Subsequently she came under my care and I drew off the ascitic fluid eight or ten times but it continued to refill. She was tapped fourteen times. She died within the last fourteen months and it was found to be a case of tuberculosis. The laparotomy was of no benefit whatever.

The other case first came under the care of Dr. Hall, of this city, and I was called to see her afterwards. She had been in the hospital at one time and presented a history of tuberculosis. After having seen the effects of these other operations we decided not to perform laparotomy. The abdominal cavity was aspirated repeatedly, upon the theory given in the paper that perhaps some relief might be given by aspiration, but the abdominal cavity continued to fill, after which tuberculosis developed in the lungs and the patient died.

From these two cases it seems, while laparotomy may give relief, where the disease cannot be removed, if tuberculosis exist and the tubercles cannot be taken away, I cannot see how we can hope for a cure of the cases by simple laparotomy. Of course we can relieve the distension, but we can do the same by aspiration. There may be some cases where an effusion of peritonitis is partially absorbed and some remaining in the abdominal cavity is cleaned away, where undoubtedly the disease is removed and the laparotomy proves a success because the patient is cured; but if there be tubercles remaining in the omentum or mesenteries I cannot see how there can be any benefit derived from laparotomy.

DR. E. W. CUSHING, of Boston: I have a case to report which is of interest in this connection as it was an undoubted case of tuberculosis and underwent laparotomy. The woman came to me complaining of vomiting. She was sent to me to have the matters vomited examined. I examined her and found a retroversion of the uterus. I treated her awhile after that, supporting the uterus with tampons, but she got no better, was always vomiting, nothing would stay on her stomach. Finally she was admitted to the hospital. Her temperature was about 99½°, sometimes more sometimes less. At first the uterus was movable but afterwards it was fixed, and there was a hardness in the region of the tubes and in the roof of the pelvis; her condition was getting desperate. There was no trouble in the lungs, and it seemed probable that it was a case of salpingitis. Laporotomy was made and upon opening the pelvis it was found to be filled with fluid which was clear and straw colored. The whole perineum was completely studded with little granules. On examining the ovaries and tubes it was found that they were in a mass of adhesions apparently of a tuberculous material. A diagnosis was made of tuberculosis peritonitis. The wound was closed after thoroughly washing out the cavity with a bichloride solution. She recovered and the vomiting ceased. Six months afterwards she came to the hospital complaining that one of the stitches in the abdomen was discharging. It was found that the lower part of the abdomen was filled with a mass which came up to the abdominal opening half way between the pubes and the navel. Some little treatment was made and she went back to Ireland. The operation was last December and we got a letter from her the other day saying that she was entirely well. She has not entirely filled up with the fluid since, but the disease is there and will some day kill her. I think before we take the risk of removing ovaries and tubes that are clearly tubercular it is well to wait for the history of those cases that have been operated upon.

I have two other cases which bear on the fact of the fluid not coming back after laparotomy. One is interesting because of the difficulty of diagnosis. The lady was supposed to have catarrh of the stomach, there was a gradual filling up and great difficulty in breathing. Dr. J. saw her and said it might be an ovarian cyst, tubercular peritonitis or chronic laryngitis. When they sent for me she was so she could not lie down and we concluded it was best to make a laparotomy. The abdomen was opened and a large amount of fluid drawn off. We found cancerous masses deep down, around the omentum and the ovaries. The wound was closed and permanent drainage established, but nothing ever came through the drainage tube. The lady lived five months and never had any return of peritoneal fluid.

Another similar case that Dr. Marcy and I operated on was *in extremis* from the tremendous extension of the abdomen, she must have weighed 300 pounds. We lifted her on the table handling her as we would an iron safe. The fluid was removed and permanent drainage established. It was found that there was a cancerous trouble. She was relieved and gradually died from the natural progress of the disease.

I think that in these cases it is good surgery to open the abdomen, I do not believe in tapping or puncturing. I believe thoroughly in opening the abdomen and seeing what there is to deal with. I think it is premature for us to follow Hégar's example of trying to take out the ovaries and uterus until we see how these cases come out.

DR. A. S. v. MANSFELDE, of Ashland, Nebraska: I wish to make a short statement: The author of the paper is correct in doubting the efficacy of iodoform or corrosive sublimate in tuberculosis of the perineum. I may add that it is only within the last two weeks that experiments have been made positively proving the absolute uselessness of iodoform in tubercles whether of the joints or perineum. It will not harm the germs, they will grow where the iodoform is. A mixture of tubercle with iodoform put into the chamber of the eye will more quickly develop tuberculosis than the tubercle itself. My authority is the late experiments in the laboratory of Berlin. I think I can offer an explanation why laparotomy will cure tuberculosis of a peritoneal nature. You are aware of the fact that in chronic hyperæmia of the lungs caused by some disease of the heart it is very seldom if ever found to be tuberculous. It is

also a clinical fact that wherever a vesical cavity is cured, outside of a few cases of calcareous degeneration, the greater number of cases are cured by fibroid thickening of the surroundings of the tubercle cavity, thus stopping the progress. Now is it not a fact that when you make a laparotomy you remove the very cause of the tuberculosis. You cause by this operation the same condition of things which nature has produced in cases of chronic progressive heart disease, hyperæmia and consequent strangulation of the existing growth on the surface of the perineum, and rapid change for the better.

THE FUNCTION OF THE OBLIQUE MUSCLES IN CERTAIN CASES OF ASTIGMATISM.

Read in the Section on Ophthalmology and Otology, at the Thirty-Eighth Annual Meeting of the American Medical Association, June, 1887.

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So much has been said and written about astigmatism that it would seem that nothing more of a practical nature could be added.

Before proceeding to the study of the function of the oblique muscles in certain forms of astigmatism, I would briefly review what has long been known. The rule, with many exceptions, is that astigmatism is due to the radius of curvature of the vertical meridian of the cornea being shorter than the radius of curvature of the horizontal meridian. The exceptions are that the meridian of greatest curvature may be horizontal or may be at any degree between the vertical and the horizontal. The meridian of least curvature is always at right angles to the meridian of greatest curvature. In hypermetropic astigmatism, whether simple or compound, the best meridian is usually vertical or within 45° of the vertical; in myopic astigmatism, as a rule, the best meridian is horizontal or within 45° of the horizontal. In the one instance horizontal lines or those nearly horizontal are best seen, while in the other, vertical or nearly vertical lines are most distinct. It is well known that, other things being equal, astigmatism is least troublesome to a patient if the best meridian is vertical, as in hypermetropic astigmatism, or horizontal, as in myopic astigmatism. In all other cases the nearer the best meridian is to the vertical or to the horizontal, the more favorable it is to the patient's comfort.

More than two years ago my observation of hypermetropic astigmatics led me to the conclusion that there is less discomfort to patients, if the best meridian of one eye is on one side of the vertical, *e. g.*, at 100°, and the best meridian of the opposite eye is on the other side of the vertical, *e. g.*, at 80°, than if both were on the same side of the vertical. A similar study of myopic astigmatism respecting the relative positions of the best meridians and the horizontal, led me to a like conclusion. I was not long in surmising that the oblique muscles must have something to do in cases of astigmatism where the best meridian is neither at 90° nor 180°. What this function is I now no longer surmise, having observed it often. It is to so rotate the eye on its antero-posterior diameter as to bring its best meridian to the vertical or to the horizontal. The oblique muscles, at best weak, soon become fatigued, and if not allowed to rest must become the source of great discomfort. For some time I was in doubt as to how they acted. It is now clear that the superior oblique of one eye must act with the inferior oblique of the other, the one muscle under the control of the fourth nerve, the other under the control of a branch of the third nerve, otherwise double vision would result, as I am able to show by means of these diagrams. The rotation of one eye towards, and of the other from, the median line, keeps corresponding parts of the retinæ in the same relative position, hence the images of external objects fall on parts of the two retinæ that act together.

Let us study why it is that the condition is more favorable if the best meridian of one eye is at 100°, and the best in the other at 80°, than if these meridians were, in both eyes, at 100° or 80°. If the best meridian of right eye be at 100° and that of left eye at 80°, the right superior oblique will roll the globe 10°, thus bringing the best meridian to the vertical, the most favorable position; the left inferior oblique will roll its eye out 10°, thus placing its best meridian at an angle of 70°, not so favorable to sharp sight as its natural position. The better image in the right eye is the one the brain takes cognizance of for the time. Soon the labor is shifted, in time too short to be computed, from the right superior and left inferior oblique to the left superior and right inferior oblique muscles, when the best meridian of the left eye is brought to the vertical, and the best meridian of right eye is turned to an angle of 110°. Now the sharper image is on left retina, and is the one the brain takes cognizance of until the labor is again shifted. This state of activity on the part of the oblique muscles alternates with the state of rest; and, consequently, the fatigue is less than if a state of tonic contraction had been kept up.

If the best meridian of the two eyes be at 100°, the superior oblique of the right eye and the inferior oblique of the left eye will roll their respective eyes so that, at the same moment, the best meridian of each eye is vertical. Other things being equal, an equally sharp image is formed in the two eyes. A state of tonic contraction on the part of these muscles is necessary so long as anything approaching accurate vision is maintained. This is necessarily attended by much fatigue and in many cases by suffering.

If the best meridians are near the horizontal in the two eyes, the one at 170° in the right and the other at 10° in the left eye, then the oblique muscles will so act as to place first the best meridian of one eye and then the best meridian of the other horizontally, etc., as I have shown in the conditions where the object of the rotation was to get the best meridians in the vertical position.

This habit of rotation is formed in early life, and, unless the condition on which it depends is cor-

rected, is continued throughout life; the symptoms caused by this rotation have, therefore, a duration commensurate with one's existence. Not so with those symptoms caused by what is ordinarily known as eye-strain, for at the age of 60 years, a little earlier or a little later, the ciliary muscle has lost all its power, therefore the symptoms due to the exercise of this power have vanished; the loss of this ciliary power being gradual, the symptoms disappear by occurring at longer intervals and being less severe.

As I have demonstrated to you, the action of the oblique muscles in giving to certain astigmatics a condition of things favorable to sharper sight, is harmonious but not symmetrical, the superior oblique of one eye acting with the inferior oblique of the other, just as the internal rectus of one eye may act harmoniously with the external rectus of the other, *e. g.*, with my face fronting the end of this room, if I look to the right the external rectus of my right eye acts with the internal rectus of my left eye in directing the visual axes toward the object at which I may be looking. The action is harmonious but not symmetrical.

If I fix my vision on this page before me my visual axes are directed towards it by the symmetrical and harmonious action of the two internal recti muscles. In like manner the action of the oblique muscles is, under certain conditions, symmetrical and harmonious, as was long ago pointed out by physiologists. The superior and inferior recti approach the eyeball obliquely and are so attached. When they contract they not only cause the eye to revolve on its horizontal diameter, but they also cause a slight revolution to take place on the antero-posterior axis. If the vision be directed upwards the superior recti, acting harmoniously as they always do, not only make the visual axes point up but, on account of the obliquity of their attachments, they would rotate, if unopposed, the two eyes on their antero-posterior axes so as to make the upper end of the vertical meridian of each eye turn towards the nose, and thus would produce double vision. This action is opposed by the two inferior oblique muscles, which are thrown into a state of harmonious and symmetrical contraction, each keeping the vertical meridian of its own eye in its normal position, thus preventing double vision. I may say here that the branches of the third nerve supplying the superior rectus and the inferior oblique muscles deserve. if any nerve does, the name "patheticus," which in no sense belongs to the fourth nerve.

When the gaze is directed downwards the inferior recti would not only turn the eyes in that direction but, if unopposed, would also so rotate the eyes on their antero-posterior axes as to turn the lower end of their vertical meridians towards the nose. In this condition the superior oblique are the muscles that oppose and by their opposition keep the vertical meridians parallel. In speaking above of the harmonious and symmetrical action of the oblique muscles I have had in mind an emmetropic eye. Physiology very properly lays stress on this kind of action on the part of these muscles and, with a single exception, it is the only function ascribed to them by physiologists. The exception is this: If the head be turned to one side, the eyes being emmetropic, the oblique muscles will act harmoniously but not symmetrically in so revolving the eyes as to compel the vertical meridian still to remain vertical notwithstanding the inclination of the head; *e. g.*, supposing my own eyes to be emmetropic this teaching would lead me to believe that, if I were to incline my head 15° towards the right, the right superior oblique and left inferior oblique muscles would each so act on its own eye as to revolve it through an arc of 15° to bring the naturally vertical meridians back to the vertical position, a thing not necessary, nor do I believe it ever occurs. I am certain it does not occur in astigmatic eyes made emmetropic by means of a proper cylinder. Suppose, as is nearly true in my own case, that a man has simple hypermetropic astigmatism, the perfect meridian being at 90°. He has been given the proper convex cylinder with its axis, of course, at 90°. To all intents and purposes his eyes are now emmetropic. Let him incline his head 15°. Should his oblique muscles now rotate his eyes 15° his vision would be made worse, in the same manner as revolving his glasses through an arc of 15°. Since this does not occur, as I personally know, for I can see as sharply with my head inclined as when it is erect, I conclude that harmonious nonsymmetrical action of the oblique muscles has no existence in emmetropic eyes, whether naturally so or made so by means of proper correcting glasses.

I feel that I can say without fear of successful contradiction that the real and only harmonious nonsymmetrical action of the oblique muscles of the eye is that, already pointed out by me in this paper, for rendering sharper the acuteness of vision in certain forms of astigmatism.

The most beautiful part of this theory is that it has a practical side. For two years it has been of incalculable benefit to me, enabling me, in many instances, to do successfully work that had been a failure in the hands of others. One remarkable case is, at this moment, in my mind. About 10 years ago a lady, then about 25 years old, consulted a reputable ophthalmic surgeon for symptoms which she had been led to attribute to her eyes. He found one eye useless from an old central choroiditis; but the fundus of the other eye was perfectly healthy. The good eye, however, had compound hypermetropic astigmatism with the best meridian of the cornea, as he determined it, at 180°. He justly attributed her symptoms to this defect and prescribed a spherocylindrical lens for its correction, placing the axis of the cylinder at 180°. For months this lady persevered in the use of her spectacles, obtaining no relief. At last, in despair, she laid them aside. About 8 years later she was encouraged by some of her friends for whom I had done some refracting work to consult me. I examined the glass given her by the surgeon referred to above, determined its strength and the location of the axis of the cylindrical part. Under homatropia I made a most careful examination. After the exercise of much patience and perseverance, I determined that the best meridian was at an angle of 165° and not at 180°. I

prescribed for her, as I now remember, the same glass that had been given her before, placing its axis, however, at 165°. After a few days of adaptation, she became comfortable and has remained so ever since, a period of almost two years. The error made by the former surgeon can be accounted for in no other way than that the superior oblique (it was her left eye) had rotated the eye through an arc of 15°, so as to bring its best meridian to the horizontal. Without a knowledge of this rotation, he hastily completed his work. The demand for rotation still existed after the glass had been given her, and was even more urgent than before, for now the rotation would bring perfect vision. Her symptoms continued, for the cause was not removed. A knowledge —at that time vague—of this tendency to rotate made me exceedingly careful in placing the axis of her cylinder. Vision being now perfect without rotation, the habit was soon broken and ever since she has been comfortable. I might refer to other cases, but such reference would occupy too much time.

The correction of astigmatism would be as easy as its detection were it not for this tendency to rotate. As it is, there is nothing more difficult in ophthalmic practice than the correction of astigmatism when the best meridian happens, as is frequently the case, to be out of the vertical or the horizontal. In some cases this tendency to rotate is so persistent that hours of patient work may be necessary for determining the best direction for the location of the axis of the cylinder. The strength of the needed cylinder is nothing like so difficult to determine. The rotation is not likely to be so persistent when the eye is under the influence of homatropia and when the other eye is covered, as when no medicine has been used and both eyes are allowed to look. If the best meridian is at 90° or 180° there can be no difficulty in placing the axis of the cylinder, for the patient's answers will always be the same, the habit of revolving never having been formed.

If after most careful work the patient can at no time decide between the two points of 100° and 105°, the point chosen must be at 100°, for it is nearest the perpendicular, the direction in which the eye has always rotated. If it happens to be wrong, it will result in partial relief; for the globe will not have to revolve so far as before in order to be the best vision, and the rotation is in the same old direction. But if the best meridian is at 100°, and the axis of the cylinder is placed at 105°, the condition after is worse than the condition before the glass was given, for the direction of the rotation must be changed, though the arc to be described is less. What is true when the best meridian is near the vertical is also true when it is near the horizontal.

The arc between the best meridian and the vertical or horizontal, as the case may be, is often too great to be described by the rotation of the eye resulting from the contraction of one of its oblique muscles. In this case an inclination of the head will aid vision. We will suppose that the best meridian of the right eye is at 45°. I do not believe that the inferior oblique muscle could rotate the eye through so great an arc; but aided by leaning the head to the right the best meridian can be readily brought to the vertical. The head may incline 25°, leaving an arc of only 20° through which the eyeball must rotate in order to complete the 45°. This leaning of the head as well as rotation of the eyeball are alike involuntary, each being under the control of the guiding sensation in the retina.

The inclining of the head by astigmatics I do not claim as an original observation; but the observation of the function of the oblique muscles in certain forms of astigmatism I do claim for myself. I believe the observation both correct and practical.

THREE CASES OF SCIATICA.

BY J. W. BROWN, M.D.,
OF SILVERTON, COL.

Case 1.—In May, 1884, I was consulted by A. P., about 30 years of age, a tinsmith. He had been suffering over a year from sciatica. His ailment was of a subacute character, but it was subject at times to aggravation. As a general thing he was able to follow his occupation, though he was never free from pain and constantly limped in his walk. He had been subjected to anti-rheumatic remedies, antiphlogistics, and counter-irritation by the use of fly blisters, liniments and frictions, and at times, for the allaying of acute suffering, morphine by the hypodermic syringe was used. I had ministered to him several times for this ailment without accomplishing a satisfactory result. He came to me the last time to be relieved from the suffering incident to an aggravation of his trouble. I prescribed 1 drop of croton oil made into 2 pills, with the extract of gentian as an excipient, and ordered him to take both pills at one dose. The result was a profuse watery discharge from the bowels which brought with it an abundance of scybalous lumps. He was almost entirely relieved of his pain and lameness at once, and remained so for several days, so that I had hopes that a complete cure had been effected. But the pain and lameness gradually returned, and in about 10 days he was as bad as before. I again administered the croton oil, with the result of a similar watery discharge and hard lumps of fæcal matter as before, and again there was relief from pain and lameness, but the sciatica again returned after a few days. I concluded that the trouble might be due to the presence of scybala in the rectum or sigmoid colon, the result of constipation, and I prescribed a preparation consisting principally of cascara sagrada, which gradually induced a regular daily habit of sufficient discharge from the bowels, and complete cure of the sciatica.

Case 2.—W. T., a miner about 43 years old. He was injured in February, 1885, while handling timber. In tumbling a piece of timber over others, one end of it bobbed up and struck him fairly in the sacro-ischiatic notch. He fell to the ground in agony and was carried to his bunk in the miners' cabin. I had to make a mountain climb of 1,500 feet to reach him. I used morphine hypodermically and left morphine powders. The next day he was no better. The pain was only slight while he remained perfectly still, and

kept the affected limb propped in a certain fixed and semiflexed position, but when he moved the limb, however slightly, a streak of excruciating pain shot down the sciatic nerve and he shrieked with agony. On this second visit I applied a blister a foot long down the thigh over the sciatic nerve, and left instructions for its after-care. I was afraid to use cathartics on account of the patient's inability to manage himself in case catharsis should not bring relief with it, and the use of the croton oil would have been extreme desperation. The blister had no appreciable effect. My patient was no better than the first hour he was injured, and on my third visit I was in a mood to resort to desperate measures. I was getting tired of making a daily mountain climb of 1,500 feet without accomplishing anything, and I went on this third visit armed with 2 pills containing 1 drop of croton oil. I found my patient propped in the position he had early found to be the easiest. He was not the least improved in his condition, and he was in the constant exertion of a positive mental and muscular effort to keep himself absolutely still. He was becoming worn in consequence of this constant effort to avoid the agony incident to the least motion. I pondered over his case awhile and over the dire catastrophe which would follow the giving of the croton oil if it should not bring relief with the catharsis. I finally resolved that I would administer the croton oil and that my patient must look after the fæces in such manner as his ingenuity might devise. I took the pills out of my pocket, and saw my patient swallow them, and then I discreetly retreated down the mountain. The result was wonderful. So soon as it was necessary on account of propriety that my patient should run he was able to do so. He was cured absolutely, immediately, and as if by a miracle. He has never suffered a stitch of pain from that trouble since, and the third day following he went to his regular work. This was a case, probably, of acute inflammation of the sciatic nerve due to a direct blow, and the mode of relief was extreme depletion consequent on the violent catharsis, conjoined with the counter-irritation of the croton on the mucous membrane of the bowels.

Case 3.—W. A., a miner, about 42 years of age. He had had two attacks of sciatica before, the first lasting 4 months, the second 3 months. He consulted me in May for his third attack of sciatica. The pain was not acute, but was of a dull, aching variety which was increased in severity by walking. His gait had the characteristic lameness associated with this affection. He said his bowels were regular. He might have meant that they were regularly constipated, as the fæcal discharge was scybalous and scanty, though he had been having a daily evacuation. I prescribed 1 drop of croton oil in 2 pills, with instructions to take 1 only. He took the pill about 8 o'clock in the evening and was kept busy making excursions to and from the water-closet until the next morning. His pain and lameness disappeared entirely for a time, but gradually returned during the 2 or 3 days following, and he took the second pill without being instructed to do so. This pill acted similarly to the first, but not so severely, and he was again relieved for a time only, the pain and lameness gradually returning. I then ordered a pill nightly of nux vomica, hyoscyamus and aloes, which was ineffectual, and I prescribed pills of the extract of cascara sagrada, each 2 gr., with instructions to take enough each night to produce a free daily evacuation. The use of the cascara finally induced a daily habit, and in the course of 10 days the sciatica gradually left him, ending in a complete recovery.

These cases are cited to show that sciatica is not always rheumatoid, but is frequently dependent on simple constipation, the correction of which cures the sciatica. The use of the croton oil produces a thorough clearing out of the large intestine and gets rid of all retained lumps of fæcal matter. The return of the sciatica is due to the reaccumulation of scybala, which produces by irritation or pressure on adjacent nerves a reflected neuralgia down the course of the sciatic nerve, sometimes for its whole length.

The use of croton oil in these cases is not original with the writer. In 1875 Prof. Donald McLean, of Ann Arbor, had a case of sciatica of 2 years' standing in the clinic. One drop of croton oil cured his case almost instantaneously, and hence the use of it in the cases above cited. The writer was a student at Ann Arbor during the following session, and Prof. McLean related the facts of his case to the class. Regarding the use of the croton as a severe remedy not devoid of possible bad results, the writer was afraid to use it for several years in such cases as above cited, though the opportunity had presented itself several times. Finally necessity compelled its use, and with such remarkable results that the history of these cases has been thought worth a careful study. In the absence of intestinal or stomachic inflammation, subacute or chronic, or hyperæmia conjoined with hyperæsthesia, the use of croton is probably quite safe; but of course, in all cases, the oil should only be used after careful elimination of the possibilities of disaster.

Silverton, Colo., July 27, 1887.

MEDICAL PROGRESS.

SURGICAL TUBERCULOSIS. — (See the preceding number of THE JOURNAL.) After treating of "Tuberculosis of the Skin, and Connective Tissue" VOLKMANN takes up: II. *Tuberculous Affections of Mucous Membranes accessible to the Surgeon.*

7. *Tuberculosis of the Tongue* appears partly in the form of ulcerations of a sometimes torpid, sometimes more fungous character; and sometimes in the form of deep-reaching knots (Knoten) which gradually soften at the centre. Solitary tuberculous ulcers of the tongue, with fungous growths and somewhat indurated surrounding, may be easily mistaken for carcinoma when the trouble appears in an elderly person. I have twice made that diagnostic mistake, and the error was only discovered by the microscope after extirpation of the diseased

part. The subsequent history of these cases confirmed the microscopic diagnosis. The knotty (or nodular, *knotige*) form of tuberculosis of the tongue, on the other hand, is at the beginning hardly to be distinguished from gummous affections of the tongue. In their subsequent course the cheesy-purulent softening of the knots and the transformation into a characteristic abscess, their way of breaking and the whole further course of the affection will leave no doubt as to the character and significance of the trouble. The great majority of the cases operated on by me, partly by scraping out and by the application of the thermo-cautery, and partly by removal of a wedge-shaped portion of the tongue, have probably succumbed later on to pulmonary tuberculosis. Some of them have, certainly, remained perfectly healthy for years, even when belonging to strongly hereditarily affected families. Whether there are tuberculous processes of the tongue that should be rather classified as lupus remains to be seen.

I have twice by autopsy of patients, that suffered from tuberculosis of bone and died of pulmonary tuberculosis, found the entire surface of the tongue covered with perfectly superficial, confluent tuberculous ulcerations, from the size of a pin's head to that of a flax-seed, between which were everywhere scattered characteristic miliary tubercles. The process had only appeared in the last few weeks before death, and had been taken for aphthæ.

8. *Tuberculosis of the Pharynx and Palate.*—I have seen almost exclusively in young persons, about the period of puberty and shortly after it. Flat, confluent ulcers, as large as a millet-seed and larger, with yellow base, spreading from the palatine arch over the posterior wall of the pharynx and the whole posterior surface of the velum palati. By strong light it is generally possible to discover the miliary tubercles between the separate ulcers. The affection is easily mistaken for congenital syphilis.

The extensive adhesions of the cicatricially contracted velum palati, with complete or almost complete exclusion of the pharynx from the nasal cavity, and certain forms of cicatricial stenosis of the pharynx immediately above the larynx, are oftener to be referred to healed-up tuberculous ulcers than to syphilis. In its severe forms the latter produces rather defects on the palate, whilst tuberculosis produces extensive ulcerating surfaces which are specially prone to cause adhesions later on.

Energetic surgical treatment is easier to institute and decidedly more promising than in laryngeal tuberculosis. Probably most of the patients die of pulmonary affections before the pharyngeal tuberculosis is cured, even if they be not already suffering from pulmonary disease; but permanent cure by early local treatment with caustics, the hot iron, scraping, etc., certainly does take place, and I have repeatedly observed it.

9. *Ozæna tuberculosa.*—There is an ozæna tuberculosa, caused by the formation of true tuberculous ulcers in the nasal mucous membrane, and which is to be sharply distinguished from the very much more frequent so-called rhinitis scrophulosa, which is simply caused by catarrhal conditions. Still more seldom do primary tuberculoses of the osseous structures of the nose, particularly of the upper jaw, secondarily lead to infection and specific diseases of the nasal mucous membrane.

10. *Tuberculosis of the lips.*—I have twice seen severe tuberculous (not lupous) ulcerations on the lips. Once in the case of a young girl with multiple focus-tuberculosis (Herdtuberculose) and sound lungs; and once in the case of an elderly lady. In the first case the deeply reaching ulcer was removed by a wedge-shaped incision, and in the second case the more flat ulceration, surrounded by thick crusts and sclerosed connective tissue was mistaken for a carcinoma, and was maltreated with superficial cauterizations. In this case excision and a plastic operation were necessary.

11. *Fistula in Ano.*—Some rectal fistulas already have the significance of tuberculous ulcers. The relation between rectal fistulas and tuberculosis of the lungs, so strongly emphasized by the older surgeons is explained, or rather corrected, by this fact. The tuberculous fistula in ano differs from the non-specific by its tendency to form great masses of fungous granulations, widespread loosening of the mucous membrane and undermining of the outer skin, as well as sinuous abscesses.

The treatment must therefore be the same as for tuberculous abscesses: free incision, scraping out of the fungous granulations, removal of the thin strips of skin and mucous membrane; open treatment by packing in antiseptic gauze, especially iodoform gauze. In obstinate cases energetic cauterization with the hot iron should also be used.

12. The analogue of tuberculous rectal fistula is found in the rare cases of insidiously developing perityphlitis. It begins after the perforation of a single specific ulcer of the intestine, in otherwise still healthy persons who up to this time have presented no symptom of intestinal tuberculosis, and runs its course in the same way, forming large tuberculous abscesses, multiple fistulas, and extensive solutions of the skin, and also with the production of massive tuberculous (fungous) granulations. —*Langenbeck's Archiv*, Bd. xxxiii, Hft. 1.

Oaten Flour in the Treatment of Burns.—Mr. G. Greene says: The comparative success attendant on the adoption of the following line of treatment, together with the fact of my being unaware of its having been advocated before, is my reason for bringing the matter under the notice of the profession. Different treatments have been from time to time suggested with the object of favoring the healing of burns and scalds with in many instances questionable results. I have for some time been in the habit of using for all degrees of these injuries equal parts of fresh lard (that is, free from salt) and oaten flour made into a paste, which, when spread on a cloth (old calico), or preferably a piece of lint, I direct to be applied or rolled round the affected part or limb, and allowed to remain on twenty-four hours, after which a fresh application is made, and so on every twenty-four or forty-eight hours, as the exigencies of the case

demand. In every instance I was well pleased with the progress of cases subjected to this treatment, several of which had been ineffectually treated by other methods.

The advantages which I claim for this application are (1) its freedom from odor, (2) its soothing properties and antiseptic action, (3) its superior healing powers, and lastly, its cheapness and the ease with which it can be procured (in most houses) on the shortest notice. This latter advantage is of no small importance, taking into consideration the sudden and frequent occurrence of injuries of this nature in ordinary domestic life.—*British Medical Journal*, Sept. 24, 1887.

ERGOTIN AS AN ADJUVANT TO DIGITALIS.—ROSENBACH, in the *Berliner klinische Wochenschrift*, No. 34, 1887, reports good results from the combination of these remedies in (1) aortic insufficiency; (2) in idiopathic dilatation of the heart, with alterations in the elasticity and contractile power of the blood-vessels; (3) in arterio-sclerosis.

He suggests the following formulæ:

℞ Inf. sec. cornu..... ℥2½.
Æther. sulphur..... ♏45.
Acid. hydrochlor..... ♏15.
Aquæ..... ℥3½.—♏.
Sig. Teaspoonful every two or three hours.

Also
Ergotin..... gr. 30 to 60.
Acet. digital..... ♏75.
Aquæ..... ℥4½.—♏.
Sig. Tablespoonful as indicated.

In pill form.
Ergotin..... gr. 45.
Pulv. fol. digital..... gr. 30.
Pulv. et. ext. gentian..... q. s.
Ad. pil. 50 in num.
Sig. Dose two or three pills.

Also
Infus. fol. digital..... ♏23.
Ergotin..... gr. 30.
Aquæ..... ℥4½.—♏.
Sig. Teaspoonful every two hours if needed.

—*Medical News*, Oct. 15, 1887.

CREASOTE IN THE TREATMENT OF PULMONARY PHTHISIS.—FRAENTZEL has used this remedy since 1878, chiefly in cases without fever, cough, or complications. The following formula was employed:

Creasote.....	13	parts.
Tincture of gentian.....	30	"
Brandy.....	250	"
Sherry, enough to make.....	1,000	" filtered.

A tablespoonful is given two or three times a day, in a glass of water, and at the same time two tablespoonfuls of cod-liver oil are given daily. The patients are kept, day and night, in freely ventilated rooms and are fed abundantly. Improvement is manifested by gain in weight, increase of the appetite, diminution of the cough, expectoration, and pain, a reduction of the area of dulness, and the disappearance of bronchial souffles. Out of 400 patients treated by this method, 150 have been permanently benefited.—*N. Y. Medical Journal*, Oct. 22, 1887.

ICTERUS NEONATORUM.—SILBERMANN (*Arch. f. Kinderheilk*, Bd. 8, cited in *Fortschr. d. Med.* No. 19) has studied the subject of icterus neonatorum, and arrived at the conclusion that it is a jaundice of reabsorption and of hepatogenous nature. The bile-stasis occurs in the bile capillaries and interlobular ducts, which are compressed by the dilated branches of the portal vein and blood-capillaries of the liver. The congestion of these vessels is brought about by the changes in the hepatic circulation that arises soon after birth, which is one effect of a general change of the blood-plasma. This blood change is a sort of fermentation depending upon the destruction of red corpuscles shortly after birth. The icterus is more marked in the more feeble infant, for in it the blood changes are more considerable than in the strong. The destruction of red corpuscles and their accumulations in the hepatic vessels afford material for the formation of bile in excess.—*Lancet*, Oct. 15, 1887.

CREOLIN VS. CARBOLIC ACID.—E. VON ESMARCH, assistant in the Royal Hygienic Institute of Berlin, has made a series of experinents with creolin, a new disinfectant, which has been highly spoken of by Professor Fröhner of the new Veterinary School of Berlin. Dr. von Esmarch made a number of comparative observations with carbolic acid on the disinfecting, deodorizing, and antiseptic properties of creolin. Amongst other observations, he noted the effects of the two substances on fluids containing cholera, typhus, and anthrax bacilli. As a rule, creolin appeared to be much the more active. Similarly the offensive smell of various putrefying liquids was controlled much more readily by creolin than by carbolic acid. Creolin soap, too, showed itself more active as a disinfectant than corrosive sublimate soap. —*Lancet*, Oct. 15, 1887.

THE TREATMENT OF ABORTION IN THE OBSTETRICAL CLINIC OF FLORENCE.—FASALA has observed the following rules in the treatment of abortion, with good results:

1. An expectant course is pursued when the cervix uteri is closed, and can be dilated with difficulty, and if no signs of decomposition of the fœtus are present.

2. Under conditions favorable for the introduction of instruments or the hand, the ovum and its appendages are promptly removed.

3. If decomposition has begun, the cervix is dilated by laminaria tents or metallic dilators, and the ovum is removed.

4. Intra-uterine injections for antisepsis are made with warm solutions of bichloride of mercury, 1 to 2000; in case of hæmorrhage, hot solution of bichloride of mercury, 1 to 4000, and tamponing the vagina, are used.—*Annali di Obstetricia*, March, 1887. *Medical News*, October 8, 1887.

GALVANISM IN ULCER OF THE TONGUE.—In the *Paris Médical* of July 23, is a report of a case of ulcer of the tongue cured by the continuous galvanic current. The treatment required 18 months and 109 *séances*.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, NOVEMBER 5, 1887.

THE TEXAS SPECIAL COMMITTEE ON SURGERY.

Some years ago an English medical weekly asked "What good (professionally, that is) can come out of Texas?" Even had this question not been answered before, a sufficient answer may be found in the two first reports of the "Special Committee on Surgery of the Texas State Medical Association." Besides the matter contained in them these reports, for 1885 and 1886, show three things: that the surgeons in Texas recognize and do their duty to the profession by contributing to the stock of common knowledge; that the Texas State Medical Association is fully alive to the interests of the profession in appointing such a Committee; and that a State medical association can find a committee to do good work.

The first report contains, so far as the records could be had, a statistical summary of all the surgical operations performed in Texas up to 1886—4,293 operations being tabulated. The report for 1886 contains a tabular statement of 1,046 operations. The death-rate of all operations up to 1886 was 8.15 per cent.; the mortality for the 1,046 operations for 1886 was 7.93. Beginning with amputations of the thigh we find that the mortality of the 150 operations performed was 36 per cent. Five double amputations of the thigh gave 1 recovery. Of the 54 fatal cases antiseptics were not used in 41 cases. Of the cases that recovered antiseptics were used in 37 cases. From the make-up of the report it seems that antiseptics may have been used in some cases in which it is not stated. Eighteen cases died in 24 hours or less; 4 died of pyæmia or septicæmia; 3 of gangrene, from neglect in 2 cases; 2 died of tetanus, and 1 had tetanus and recovered; 1 died of pulmonary congestion from ether; 1 died of erysipelas; and in 24 cases the cause of death is not stated. In 37 cases the operation was performed for railway injury, gun-shot wound, or other severe traumatism. The anæsthetic was chloroform in 130 cases, ether in 8 cases, and chloroform and ether in 11 cases, not stated in 1 case. The shape of the flap is not stated in many cases, nor is the time after injury at which the operation was performed. Inasmuch as the date of operation is not given in the first report it is, of course, difficult to form an accurate opinion of some things regarding the operations.

Of 97 amputations of the leg 37 died, 18.78 per cent.; 8 double amputations with 2 deaths, 1 being complicated by a railway injury to the head, the other a double operation on leg and thigh for railway crush, and died of shock. Antiseptics are mentioned in connection with 65 operations, of which number 18 were fatal—29.38 per cent. Five cases died of shock; 1 case of triple amputation, both legs and one hand, died of exhaustion in 2 days; 3 died in 24 hours; 3 of secondary hæmorrhage; 3 of tetanus; 1 died on 30th day, having passed from operator's care on 10th day; 6 died of pyæmia and septicæmia, carbolic acid being used in 4 cases, the operation being performed for compound dislocation of ankle, necrosis and gangrene from old gun-shot wound, chronic ulcer and necrosis, compound comminuted fracture of both bones (never rallied from shock), gangrene, and old ulcer; 1 died of exhaustion after amputation for senile gangrene; 1 of exhaustion and dysentery, the operation being for railway injury; 1 of gangrene, operation for railway injury; 1 from cachexia in 40 days, operation for cancer of heel; in the other cases the cause of death is not mentioned.

Thirty-two disarticulations of the shoulder gave 4 deaths—12.5 per cent., the operations being performed for gun-shot wound, gangrene after wounds of elbow, railway crush of shoulder, and railway crush of arm, leg and trunk; in the third case the arm was removed, with neck of scapula and part of clavicle, and subclavian tied in lower third; operation performed on third day, and death from septicæmia on sixth day. Eight disarticulations of the hip gave 4 deaths; 1 died in 20 minutes and 1 in 2 hours, both after gun-shot wounds, and 1 in 4 hours, after railway injury. Eighteen disarticulations at knee-joint gave 4 deaths, 1 being an engine crush of both legs, right thigh amputated; 1 of neglect of nurses and secondary hæmorrhage; 1 after operation for necrosis of tibia; and 1 of septicæmia, after secondary hæmorrhage.

The tables of resections are interesting, and include some total excisions. The most interesting of these operations was a case of removal of the whole eighth dorsal vertebra for crush from the fall of a tree. The patient died on the sixth day from a wound of the lung, the paralysis having all gone. In reporting the cases many of the operators committed the error of not giving the result as to the subsequent usefulness of the limb. Three cases of resection of the sternum in continuity are reported, all for caries, 2½ inches being removed in 1 case. All recovered. Of the 55 cases of resection of joints 2 died, neither from the operation. Of 63 cases of resection of bone in continuity none died.

Eighty-four ligations are tabulated, with 11 deaths; these include ligations of the subclavian 4 cases, 2 deaths, 1 from perforation of pleura by aneurismal sac; internal mammary 1; axillary 3; brachial 17, 2 deaths, 1 from secondary hæmorrhage; common carotid 6, 3 deaths, from hæmorrhage on twenty-second day, in 6 hours from exhaustion, and from reopening of sac of returned aneurism and tying external carotid and internal jugular; external carotid 4, 1 death, just mentioned; external iliac 4, 1 death from repeated hæmorrhage; common femoral 2, 2 deaths from recurring hæmorrhage; superficial femoral 10 cases; popliteal 1; and other minor ligations.

Under the head of "trephining bones of the cranium" we find 44 observations tabulated, with 8 deaths. In 17 cases the operation was performed for recent *depressed* fracture, with death in 2 cases; in 11 cases for epilepsy after fracture or other cranial injury, 1 death, 2 permanent recoveries, improvement in 2. In one case, after old fracture of parietal bone, and epilepsy, there was profound coma, which was relieved by withdrawal of pus; 5 crown-heads were removed, and a spiculum lying on dura; exploration and incision evacuated the abscess; a drainage tube was used for 10 days; hernia cerebri occurred, which was treated by compression by flaps of scalp; recovery was rapid and permanent. In one case of depressed fracture from railway injury 27 fragments of bone were removed. The patient was comatose for 9 days and then recovered.

Of tracheotomy for foreign bodies 43 cases are tabulated, with 4 deaths. For disease the operation was performed 69 times, with 49 deaths.

One hundred and fifteen amputations of the female mamma gave 7 deaths, 6 after operations for cancer, for which the operation was performed 98 times. The causes of death after the operations for cancer were: general erysipelas 1 case, phthisis 1 case, rapid recurrence 1, congestion of lungs from anæsthetic 1, septicæmia 1, died on table from anæsthetic 1, extension of disease 1. Of the 92 cases which recovered, the result as to permanence is given as complete in 3 cases, no recurrence after 12 years in 1 case, after 9 years in 1, after 7 years in 3, after 6 years in 2, after 5 years in 1, after 3½ years in 1, after 2 years in one, after 1 year in 3, indefinite 11. In one case relapse occurred in the cicatrix after 10 years; recurrence and death in 1 case after 5 years, in 4 cases after 2 years; recurrence 5 times after 3 years, 7 times in 1 year, four cases in 6 months, and in 5 cases at an indefinitely stated period. Sarcoma is mentioned twice, and 5 other cases were probably sarcomatous; all of these recovered without recurrence, except one, in which the result is not stated.

One case of gastrostomy is reported by Herff, for impermeable stricture of the œsophagus from swallowing concentrated lye. Howe's operation, gastrostomy at two periods, was performed. The child, 7 years old, regained her health perfectly; was alive 6 years after the operation, strong and well nourished, though always fed through the fistula. Herff also gives 2 cases of splenectomy. In the first case the spleen was detached from the stomach and lying across the umbilical space. Old adhesions to the parietes were detached by the fingers, and about ten vascular adhesions ligated. A pedicle of vessels was included in Atlee's clamp. The spleen weighed 4½ pounds. The maximum temperature reached was 100°, pulse 80, no vomiting. The wound healed and the sutures were removed between the fourth and sixth days, and the clamp on the seventh. On the same day the woman had an angry altercation with her husband, which was followed by the expulsion of a macerated fœtus, tetanus, and death on the following day. In the second case a leukæmic spleen was removed, it filling the whole abdominal cavity and pushing up the diaphragm. The organ weighed 13 pounds. Death was due to hæmorrhage from the broken short adhesions which could not be tied.

Cupples reports a case of operation for carcinoma of the pylorus of more than a year's standing, the patient being extremely emaciated. There was rapid recovery from the operation, and great relief to stomach symptoms. The patient went 500 miles to his home, and died some weeks afterwards. Herff reports a nephrectomy for sarcoma of supra-renal capsule and kidney, which was floating; the patient made a perfect recovery.

Want of space prevents our making a more complete analysis of this report at this time. But one of the objects had in view in noticing this report at such

length was to show that such reports are of great value; another was to show that something good can "come out of Texas." Few can form any idea of the immense labor required in making out such a report, and too much praise cannot be given to the Committee, the chairman of which is Dr. George Cupples, of San Antonio.

TUBERCULAR LESIONS OF THE LUNGS.

The "line of march" of tubercular lesions of the lungs is discussed in a most interesting way by DR. J. K. FOWLER, in the October number of the London *Practitioner*. The apical position of the primary lesion has been recognized almost as long as we have had exact information about diseases of the lungs. But the path and course of extension of the tubercular inflammation has been little studied. In 1882 Dr. William Ewarts' excellent Gulstonian Lectures on "Pulmonary Cavities" threw much light on the location and mode of growth of these lesions. He showed that cavities at the base of the lungs were very rare, that they occurred at the apex oftenest, in the dorso-axillary region a little less frequently, and in the mammary still less frequently, although in about one-half of all the cases.

Dr. Fowler aims especially to point out the order in which the tubercular lesions appear, and the tract along which the infection travels in the lungs. He claims that in chronic cases, as a rule, the morbid changes follow a definite path. In acute cases exceptional courses of development are common.

The primary lesion almost invariably is found in the apex of one or both lungs, or rather about an inch below the true apex. This corresponds externally with the supra-clavicular fossæ. Often, but somewhat less frequently, the primary lesion is so located as to correspond with the first and second interspaces below the outer third of the clavicle. The direction of the extension of these primary lesions is backward and downward chiefly.

From apical primary lesions the first secondary one is usually at the apex of the lower lobe. The latter appears very early, as a rule; often when the primary tubercular nodule is no larger than a cherry. The location of this secondary lesion is about one to one and a half inches below the upper and posterior extremity and about the same distance from the posterior border of the lower lobe. It tends to spread backward and downward along the line of the interlobular septum, producing a wedge-shaped mass of consolidation. The location of the lesion corresponds with the inner border of the scapula when it is drawn as far away from the vertebra as possible. Further extension towards the base of the lower lobe does not take place by a direct increase of the area of consolidation so much as by the formation of irregularly scattered tubercular nodules. The base of the lung is very rarely affected to any extent, and in the majority of cases contains no tubercular material. When this is not true the lung tissue has first been weakened by pneumonia, pleurisy or similar affections.

The middle lobe of the right side often escapes invasion, and if involved, is not usually until late in the course of the disease. The lesion generally is tuberculo-pneumonic in character; and follows a primary lesion of the upper lobe of the same side. The area of consolidation may be considerable, but the area of softening is generally small.

When the opposite upper lobe is secondarily affected, which, as a rule, occurs early, the lesions are located symmetrically in both lungs. A third location is noticed in secondary lesions at times. This is close to the interlobular system about halfway between its upper and lower extremities, and corresponds on the chest wall to the upper part of the axilla.

When the lower lobe of the opposite lung is secondarily affected the lesion is similar to that on the side primarily involved. Almost invariably the primary lesion is in the apex of one lung, the next lesion appears in the upper part of the same side, and then a third focus of disease may appear, symmetrically located in the opposite lower lobe. Rarely this order is found changed and the lower lobe of the lung primarily affected is untouched by the disease, which appears secondarily in the apex of the lower lobe of the opposite side.

Dr. Fowler believes that in those cases that illustrate most perfectly the eruption of lesions in the order just sketched, the infection of new lung areas is by means of the secretions carried through the bronchial tubes to the various parts of the lungs. When infection occurs through the agency of the blood the foci of the disease follow no plan as regards place or time of appearing. Also when infection of new areas takes place through the lymphatic channels it follows no longer the plan and course described. The information given us by Dr. Fowler, if confirmed, will enable us to judge more definitely of the stage of advancement of the disease, at least in all chronic cases, and furnishes us also with landmarks which locate the lesions. Of the importance of locating the secondary lesion near the upper posterior part of the lower lobe he says: "The infiltra-

tion of the lower lobe at this spot in the early stage of phthisis is one of the most constant features in the pathological anatomy of the disease, and its recognition is a matter of much importance, as in doubtful cases it is almost positive proof of the existence of tuberculous disease of the lungs. I have seen extensive lesions of the apex not presenting a trace of tubercle in which the lower lobes were quite free from disease. The existence of this lesion as a test of the tubercular nature of the disease holds good, I believe, as a positive test, but its absence does not negative tubercle."

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

At a meeting of the Executive Committee on October 5, in Philadelphia, nine *Special* Societies were represented by one member from each Society. Of the nine representatives present, four were from New York, two from Philadelphia, one from Baltimore, one from St. Louis and one from Alabama. Dr. Wm. Pepper was made Chairman and Dr. John P. Bryson, Secretary. The first regular meeting of the Congress is to be held in Washington, D. C., September 18, 19 and 20, 1888; the sessions of the *Congress* to be held in the evenings, leaving the day for the Special Societies to meet for their own work separately. It is worthy of notice that the American Gynæcological Society, which is one of the largest and most influential of the National organizations of specialists in this country, at its recent meeting in New York refused to join the proposed Congress, and appointed its next annual meeting in Boston, Mass., to commence on the *third* Tuesday of September, 1888. As the entire aggregate membership of the nine coöperating specialist societies does not probably exceed 350, or less than half of 1 per cent. of the regular practicing physicians and surgeons in this country, their assumption of the name of "The Congress of American Physicians and Surgeons," will hardly deceive anybody but themselves. Neither will the amount of scientific work they will be likely to accomplish in three September evenings at Washington, in addition to two sessions in separate society capacity on the same days, be sufficient to astonish the professional world.

THE WESTERN PENNSYLVANIA MEDICAL COLLEGE, Pittsburg, is reported to have commenced its second annual course of instruction with a class of nearly 100 students; which is the more gratifying, as the Faculty recommend a full graded three years' course.

WILLIAM SCOVELL SAVORY, F.R.S., London, has been appointed by the Queen Surgeon Extraordinary to her Majesty, in place of the older Richard Quain, recently deceased.

COMPLIMENTARY.—We see it stated by cablegram that the Sugar-Coated Pills and Effervescing Salts, furnished by W. R. Warner & Co., Philadelphia, received the highest award for superior quality from the American Exhibition in London.

SOCIETY PROCEEDINGS.

PHILADELPHIA PATHOLOGICAL SOCIETY.

Stated Meeting, September 22, 1887.

THE PRESIDENT, J. C. WILSON, M.D., IN THE CHAIR.

DR. W. OSLER presented a specimen of

THROMBOSIS OF THE PORTAL VEIN.

Chronic obstruction to the blood flow in the branches of the vena portæ within the liver, such as occurs in cirrhosis, is probably the most common cause of this rare condition. We not infrequently meet with atheroma in the portal vein and its branches in cirrhosis, one factor in the production of which, as in the pulmonary artery in mitral stenosis, is the heightened blood-pressure; and to this change the thrombus formation is closely related. At first, and possibly for a long time, mural, it gradually becomes obliterating, and if the collateral circulation is established, the patient may live some time, as in a case which I reported in 1882 (*Jour. Anatomy and Physiology*), in which the vein was represented by a firm fibrous cord. The specimen here shown was taken from a Swede, aged about 45, who was admitted to the University Hospital May 7 with ascites. As he could not speak English it was difficult to obtain a history, but we ascertained that he had been in failing health for some time, and latterly his abdomen had become swollen. It did not appear to have come on suddenly. The liver dulness was reduced, the superficial abdominal veins were moderately distinct, and the case was regarded as one of ordinary cirrhosis. He was tapped five times between May 20 and July 14, and from 12 to 15 pints of serous fluid removed on every occasion. He was able to be up and about after each tapping, but he gradually became emaciated, weak, finally comatose, and he died July 20. There were no hæmorrhages, and it may be stated that the abdominal veins were at no time more distended than is common in atrophic cirrhosis. The condition post-mortem was as follows: fibrous adhesion in peritoneum; atrophic cirrhosis of liver, with thickened capsule; old firm thrombus in vena portæ, extending into splenic and mesenteric veins; thickening and patchy

calcification of the walls of the portal vessels; great enlargement and induration of the spleen; kidneys indurated; no special changes in thoracic organs. A careful dissection of the abdominal veins was not made, but I am told by Dr. Miall, who made the autopsy, that the peritoneum was very dark and the veins behind the liver very large. The collateral channels were, no doubt, largely the anastomoses which exist between the peritoneal, mesenteric and lumbar veins and the gastric, diaphragmatic and œsophageal vessels. As in the case of fibroid obliteration referred to, a perfect collateral circulation may be established in occlusion of the portal vein, and the patient may live for months or years. In this instance the thrombus was evidently old, as in places there were calcareous changes. The branches in the liver were filled with soft clots. The gall-bladder was full of normal bile. In two other cases of cirrhosis I have met with thrombi in the portal vein, in both instances with thickening and atheromatous changes in the vessel walls, but the thrombi had not undergone such degenerative changes as in this specimen.

Dr. H. F. Formad presented a specimen of

CHRONIC HYPERTROPHIC CIRRHOSIS OF THE STOMACH WITH GASTRIC ULCER, AND COLLOID CHANGE OF THE MUCOUS MEMBRANE.

A sailor, aged 38, a German, was admitted to the Naval Hospital 10 months ago with the symptoms of dyspepsia and occasional vomiting. There had been absolutely no pain at any time and no vomiting of blood. Three months before death he began to have serious difficulty with swallowing, with œsophageal regurgitation, and though a stricture was sought for none was found. Very curiously, for a few days immediately preceding death he swallowed well. Death resulted from starvation. At the autopsy the abdominal cavity was found to contain 52 ozs. of straw-colored fluid and showed evidences of old peritoneal inflammation, especially at the upper part, where the organs were matted together into one mass. The stomach was quite contracted, having a capacity of 4 to 5 ozs. Its walls were ½ to 1 inch thick, the thickness greatest at the cardia and gradually diminishing till within 2 inches of the pylorus, where the wall abruptly resumed its normal condition. The first impression given was that it was a case of cancer, but closer examination showed it to be simply great thickening of the wall with polypoid elevations of the mucous membrane and secondary colloid change. The ulcer was situated in the posterior wall near the cardia; its bottom formed by tissue in the spleen and the peritoneal coat of the transverse colon. Communication with the abdominal cavity had been prevented by firm adhesions. The omentum contained a number of colloid granules as large as peas. The abdominal lymph glands appeared to be amyloid. The case was remarkable, first, in the complication of hypertrophy with gastric ulcer, a condition which the reporter had never before seen; second, in that the hypertrophy should commence at the cardia instead of at the pylorus.

Dr. Formad also presented the specimen of a

STAB-WOUND OF THE ABDOMEN.

Laparotomy had been performed and a wound of the intestine found, which was sutured. The man died suddenly 60 hours after the operation. At the autopsy there was only a very slight amount of peritonitis found and the wound in the intestine had firmly united. The abdominal condition not being sufficient to account for death, the brain was examined and a very distinct embolus in the floor of the fourth ventricle found. The stomach had not been touched, but on its peritoneal surface were some slight tears, and opposite them in the mucous membrane, but not corresponding exactly with them, were several distinct, small linear ulcers, which appeared like ulcers due to some injury. They did not look at all like ordinary ulcers, but still had evidently formed ante-mortem. There was an old hæmorrhagic infarct of the kidney.

Dr. Osler had been particularly interested in the first specimen, and had hoped that possibly it might prove to be related to the formation of gastric ulcer in the way pointed out by Dr. Baumgarten, and to which he wished to call attention, namely: that the movement of the stomach against the costal edges produces distinct localized thickenings, and that in corresponding points of the mucous membrane ulcers form.

Dr. Formad also presented a specimen of

GUNSHOT WOUND OF THE HEART.

The ball had entered the chest between the fourth and fifth ribs on the left, passed through the left ventricle, and was found imbedded in the spinal column. Death was instantaneous. The principal point of interest lay in the fact that the ball had traversed the cavity of the left ventricle near its base without injuring the chordæ tendiniæ or the leaflets of the mitral valve.

Dr. Wescott presented

A MEDIASTINAL TUMOR,

removed from a man, aged 28, who had entered the University Hospital a week ago. He was a brakeman, with good family history and personal habits, and no venereal history. He had been in good health and at his work till last July, when dyspnœa developed and he quit work. About the same time he noticed a tumor in his neck. There was no pain nor difficulty of swallowing. On admission he was in a condition of orthopnœa. Over the left side of the chest there was complete dulness, extending to the right edge of the sternum, with absence of respiratory murmur. The apex beat of the heart could not be seen or felt. The tumor of the neck involved the superficial lymph glands and could be traced behind the sterno-cleido-mastoid muscle and down into the chest. There was no inequality of the pupils and no œdema. At the autopsy, on opening the chest nothing but a large fleshy mass and the edge of the right lung could be seen. The mass penetrated the chest wall between the first and second ribs and became continuous with the tumor in the neck. It was closely attached to the bodies of the dorsal vertebræ from the first to the fourth, filled all

the upper part of the left chest, and completely enveloped the great vessels. The œsophagus was pushed to one side but not compressed. The left lung was completely collapsed and contained numerous secondary nodules. The heart was pushed down and back, but was normal. The mesenteric glands were enlarged. A section of the tumor showed largely fibrous tissue. The reporter asked whether, in the case of such a large mass, the absence of pressure symptoms was not remarkable?

DR. J. B. WALKER said that in the absence of pressure symptoms such a large tumor was, in his experience, unique, generally very much smaller ones giving rise to marked symptoms.

CHICAGO GYNÆCOLOGICAL SOCIETY.

Regular Meeting, Friday, June 24, 1887.

THE PRESIDENT, CHAS. WARRINGTON EARLE, M.D., IN THE CHAIR.

DR. JOHN BARTLETT read the following paper, entitled *Several Items of Obstetrical Interest.*

IS QUININE AN OXYTOCIC?

Some twenty-five years ago, as well as my memory serves me, the question began to be mooted whether quinine was an abortifacient and oxytocic or not. Prior to 1862, so far as I am aware, preparations of cinchona were given to pregnant women freely and without any suspicion that harm might result therefrom. To-day the profession is divided in opinion on this subject; some scrupulously withholding quinine from the pregnant woman, others giving it without reserve. In the course of my reading, I have chanced upon an observation of Mauriceau's which indicates that two years prior to Sydenham's notice of the bark, this obstetrician had sought an answer to the query in question. I quote: Obs. CCLXXII: "On the 28th of October, 1680, I delivered a woman who had during a period of fifteen days three or four violent accessions of tertian ague, which obliged me, after a bleeding from the arm, to administer cinchona. By the use of this remedy the fever entirely ceased. After having continued in good health for ten or twelve days, she was happily delivered of a large healthy boy. This experience caused me to recognize a fact, which has since been confirmed by a number of similar cases, to-wit, that pregnant women can take cinchona with the same benefit as other persons, without its occasioning any injury to the mother or child."

I cannot but regard it as a curious and interesting fact that a question as to the specific action of a medicine put forth in 1680 should be *adhuc sub judice.*

Last year I reported to this Society a case of

PLACENTA PRÆVIA IN WHICH THE PLACENTAL TISSUE EXTENDED OVER THE ENTIRE OVUM.

Cases have been reported by Sirelius, Barnes, Hegar, Hicks, and Judell in which placentæ have been so spread out as to occupy nearly the whole of the internal surface of the uterus. In connection with this subject, I call your attention to the following observation of La Motte's:

Observation CCCCI.—"The 22d of July, 1717, Dr. Ducet sent to desire me to go to a farmer's wife, two leagues off, who had been in labor ten days and ten nights, during which time she had not the least rest." (La Motte here proceeds to describe how he delivered by turning and continues:) "I had a great deal of trouble in bringing away the placenta, which was not one-third so thick as usual, but merely membranous, of about the thickness of a child's diaphragm; it not only adhered to the bottom of the uterus, but to its whole circumference; so that a young practitioner would hardly have believed that any placenta at all was left behind."

PLACENTA PRÆVIA WITH CERVICAL ATTACHMENT.

In Charpentier's treatise on obstetrics, we find the following list of authors who admit that in certain cases of placenta prævia it is possible that the placenta find attachment within the neck of the uterus: Sirelius, Barnes, Thudicum, Chavanne, Marchal, Thévenot, Keppler, Pajusko, Rokitansky, Sackreuter, Mettenheimer, La Chapelle, Pinard, Tarnier, Hubert, and Noël.

I desire to prefix to this list the name of Andre Levret. From his work, "L'Art des Accouchmens," I extract the following passage from his paper on Placenta Prævia published at Paris in 1751. Page 373: "An interesting question naturally arises in this connection, Why some women having the placenta adherent in the neck proper of the uterus arrive at term, whilst others, by far the majority, under the same condition do not reach the normal limit of gestation?

"This variation in effects proceeding from the same cause must depend upon some particular circumstance as a determinating clause. I explain the matter in this way. According as the placenta is primarily attached higher or lower in the neck proper of the uterus, hæmorrhage will occur sooner or later. Thus when that vascular mass has taken root nearer to the os tincæ, the woman will be able to approach nearer to the term of gestation than if it had been implanted as high as the constriction (internal orifice) of the uterine neck. And thus the time of interruption of the pregnancy by bleeding will vary with the level of attachment of the placenta between the two extremities of the neck. It is demonstrated as well by the mechanism of pregnancy as by the daily experience of the accoucher, that the neck does not begin to expand to aid in augmenting the capacity of the uterus except in the later months of gestation; and that it is by segment that the cervix continues thereafter to expand from above downwards. Now, the neck cannot thus expand without sooner or later obliging the placenta, which is not susceptible of like expansion, to detach itself in part, either in some point of its circumference if it be more advanced upward on one side than on the other, or at its centre if this be in exact correspondence with the upper end of the cervical canal. It follows then as a necessity that a hæmorrhage shall occur at a time more or less near or more or less distant from the natural term of pregnancy, according as the placenta shall be at-

tached further from or nearer to the [lower orifice of the] central canal.

The credit of first suggesting

ABDOMINAL SECTION IN THE TREATMENT OF RUPTURE OF THE CYST IN ABDOMINAL PREGNANCY.

is generally given to Osiander and Heim. In Levret's work on obstetrics may be found the following sentences. His appreciation of the difficulty incident to the detachment of the placenta in such a case is complimentary to his foresight and sagacity.

"In extra-uterine pregnancy, the fetus inclosed in the Fallopian tube or ovary ordinarily bursts its envelopes before full term, and the mother perishes of hæmorrhage with her infant in her abdomen. This sad accident seems to indicate abdominal section, but I doubt very much whether an operation would succeed in saving the mother even if there were present sufficient symptoms to enable one to decide, and to decide promptly, upon an operation. Because, it would be necessary, in order to hope for success, that the site of attachment of the placenta should have power, such as the womb has, to contract very powerfully and quickly; and that is an impossibility."

DO DIRECT-TRACTION FORCEPS EXERT DANGEROUS COMPRESSION?

Some writer has said that, after inventing an instrument, the first thing that one meets is an objection. It is objected to the Tarnier direct-traction forceps that the screw by which the handles are approximated so as to take hold of the head may exercise a dangerous compression. My object in this communication is to show that such compression need not be made, and that the screw does not therefore constitute an objection to the instrument.

I beg leave here to quote from Dr. Barnes: He says: "Let us . . . study the power of the forceps . . . How does it take hold? You may at first sight suppose that this is accomplished by grasping the handles. . . . The hold, especially in short-handled forceps, cannot be due to the handles. It is really due to the curvature of the blades, which fit more or less accurately upon the globular head, and the compression of the bows of the blades against the soft parts of the mother, supported by the bony ring of the pelvis. . . . In many cases, this outward pressure upon the bows of the blades is enough to serve for traction. It is not necessary to tie the handles of the forceps. You may even do without handles altogether.

For a few years past I have used the direct-traction principle in almost all cases of forceps delivery. And I have found that my hold upon the common handles becomes more and more slight as experience enlarges. So that in an ordinary case of delivery, the fingers of the left hand rest upon the handles rather to ascertain whether compression be needed than to press the handles together.

Recently I have witnessed two cases of delivery as an assistant to Dr. J. H. Hooper, who uses forceps provided with direct traction handles. I was surprised to find that he frequently let go of the ordinary handles entirely and while he pulled upon the traction handle with one hand, he used the other to determine the progress of the head, or to sustain the perineum. Upon inquiry I learned of Dr. Hooper that he did not ordinarily clasp the handles; only when powerful traction was applied did he deem it necessary to do so. I think it may be said that such compression as may be needed may be employed to the ordinary handles of a direct tractor by means of a screw or otherwise, without fear of injury to the child.

THE VERNIX CASEOSA, AN ELEMENT OF ERROR IN THE DIAGNOSIS OF THE CHARACTER OF PUERPERAL HÆMORRHAGE.

Several months since, I was called to a woman pregnant with her eighth child at full term. Six hours prior to this visit, without exciting cause, there had been so great a flowing as to demand the use of the tampon. The os uteri was then closed; there had been no pains until the last half an hour. I found the pains active, and hæmorrhage free, and increased during uterine contractions. The os uteri was two centimetres in diameter and softened; through it could be recognized the globular form of the head. Between the presenting part and the finger could be plainly felt a thick plate of tissue firmer than a clot, and of the consistence of a placenta. Over its surface could be traced depressed sulci, districting the mass into lobuli. No doubt was entertained as to the nature of the case. I had never met with an instance in which the diagnosis of placenta prævia was so speedy and so positive. Assistance was immediately sent for. I was disturbed in the hurried preparation for such interference as more thorough examination might suggest, by the cry of the patient that a great quantity of blood had passed away. The membranes had ruptured, the bleeding had ceased, the "placenta" had disappeared, and the head was passing the perineum.

After the birth of the child, I looked about the site of the *res gestæ* for an explanation of the deceptive feel, so simulating that of the placenta. I found that the entire vertex had been covered by a disc of vernix caseosa, one-third of an inch in thickness, of the appearance and consistence of leaf fat. In the presence of Dr. Clark, I placed side by side the maternal surface of the placenta and the disc of the vernix caseosa; the feel of the two was very similar. Dr. Clark had never encountered such an instance of superabundant vernix. The upper parts of the arms of the child were so bedaubed with the sebaceous secretion as to remind one of the appearance of the spokes of a wheel on a muddy road. The hæmorrhage came from a surface of detached placenta situated about an inch from the os uteri.

DR. E. W. SAWYER: The great objection that Levret raised to laparotomy was the management of the placenta. He thought the hæmorrhage would necessarily be fatal, because there is no provision made by nature for the contraction and closure of the large vessels. Thomas has enlightened the world greatly on that point, showing how the placenta should be managed. Dr. Janvrin, of New York, speaks of a case of extra-uterine pregnancy, with the head presenting so low that he was tempted to draw

his bistoury through the tumor and saved the woman (I forget the fate of the child). He drew the umbilical cord down through this surgical opening and was strongly tempted to deliver the placenta, but remembered the teachings of Thomas and left it, and that is the secret of success in these cases—leaving the placenta alone; Nature will in time cause a safe separation in the majority of cases. The statistics of Thomas are interesting on that point. Dr. Knox (I am sorry he is not here) narrated to Dr. Earle and myself, during the session of the Medical Association here, a very interesting case, in which he had delivered a woman of one child and after the delivery found another child in her abdomen, but not in communication with any natural passage of the woman. It was outside, in an adventitious sac. The distance between the child's head and his finger did not seem to exceed the thickness of a piece of paper. I said at once, "why did you not take your bistoury and deliver it?" He said he did not think it was feasible, and left the house without delivering the woman; he promised to let us know the result.

It was a case of extra-uterine pregnancy, and was the "celebrated case" in which I operated at Boulder, Col. The large vessels of the placenta had been left, and the whole mass was attached and in a great chamber containing much pus. The fœtus was in a condition of excellent preservation, but its fat had been changed so that in bending the elbow it cracked a little. The result of the operation was death within twenty-four hours. It was the first case of the kind that had occurred in that part of the country; the woman was well known and had gone three and a half years after her attempted labor, which had occurred under the care of a physician there. She had carried her tumor for a long time, but it afterwards began to grow smaller and she was able to run a hotel, attend dances, and lead an active life generally. Finally there was a little hectic and some chills, and a physician was called. He plunged a trocar into her abdomen and sent specimens of pus to Denver. I was invited to see the case and if any interference was necessary to make it. Boulder was 30 miles from Denver, up in the mountains, and I was driven there by the doctor. We operated late in the afternoon. Learning the history, I thought it was an extra.uterine pregnancy; it was a straight case and easy enough to follow the steps, and I advised laparotomy, which he did as well as he could under the circumstances, but the woman died. There was such a quantity of pus, and I don't suppose we used the precautions we would now, and it is probable a good deal of it went into the peritoneal cavity.

DR. BARTLETT: When Thomas had his first case he cut into the sac and removed the placenta. If he had had the forethought of Levret he would not have removed the placenta.

THE PRESIDENT read the following paper, entitled

OBSERVATION IN CHIARA'S CLINIC AND THE HOSPITAL ST. MARIA NUOVA, FLORENCE, ITALY.

Chiara is authority in regard to the subject of spontaneous evolution. The following is an abstract of his thesis printed in 1878:

In February, 1877, a woman was admitted to his hospital in Milan who had been in labor twenty-four hours and had been sent to him from the country in a very uncomfortable conveyance. A midwife had seen her early, ruptured the membranes and found the shoulder and cord prolapsed, and had called a surgeon to assist her, who tried in vain to turn. She was now started for Chiara. When she arrived at his hospital she was in a fainting condition and died in twelve moments after, while means were being resorted to to resuscitate her. It was found on examination that the left arm was thoroughly protruding, and to determine exactly what nature had done toward delivering this woman, it was determined to congeal her, and make exact drawings. After the "twenty-four post-mortem hours" she was kept in ice and salt and then divided in an antero-posterior position by means of the saw. A large blood clot was found around one of the legs of the fœtus and an abundant extravasation of blood (1200 grams) in the periuterine connective tissue. These may have been produced either by the doctor in trying to turn, or in her journey to the hospital over the rough roads.

What should have been done? If the shoulder was not impacted too much, it was the duty of the surgeon who first saw her to try to turn. If the shoulder had been wedged into the pelvis when Chiara first saw it and the child had been alive, he would have let it alone, trusting to nature, but helping along as best he could. If it had been dead, he would have performed embryotomy and delivered at once. If he had tried to save the child he would have watched the mother carefully, and if her life was endangered he would have sacrificed the child. He believes that in some cases of turning by those not particularly skilled are more dangerous to the mother than the crotchet; a very dangerous instrument, as he says, much more difficult and pernicious to the mother than cephalotripsy in cases of not very narrow pelvis; more difficult and hazardous than embryotomy.

Prof. Chiara's conclusions are as follows: First, the general law is that shoulder presentations, the seventh month of pregnancy being past, require version. Second, the necessary conditions for the operation being absent, this is contra-indicated. Third, there are absolute contra-indications to turning; deep shoulder impactment is a permanent contra-indication, and the sticking of it to the pubic arch shows that the second stage of spontaneous evolution has already been accomplished. Fourth, spontaneous evolution is a phenomenon of more frequent occurrence and less dangerous and difficult than authorities admit. Fifth, finding an absolute and permanent indication for turning in shoulder presentation, we ought, if the fœtus is alive, to look for spontaneous evolution, helping the latter with means that do not injure the fœtus. The fœtus being dead, we should resort immediately to embryotomy.

The Lying-in Chamber.—This is a large airy room, with hard-wood floors and with walls that can be thoroughly disinfected. The bed is made so that it can be folded upon itself, making it one-half as long

as usual. This arrangement is so that when the bed is folded on itself all the ordinary obstetrical operations can be performed with ease, as the bed is now the heighth and length of the usual operating table. A woman is brought into the lying-in chamber when the os uteri is well dilated, if she is a primipara; if a multipara she is brought in somewhat earlier. If time is permitted, she has a carbolic acid bath before being brought into the lying-in room. The bed clothes are used only once. During the early stages the woman is left to do about as she pleases, but no unnecessary examinations are made and *never* until the hands are thoroughly disinfected. A vaginal injection is given about the time the head begins to press against the perineum, and as soon as the vulva begins to open the spray is turned on to the parts and kept constantly going until after the completion of the third stage. During the latter part of the confinement the attending physician is busy making all manner of measurements of the abdomen and pelvis. He also listens carefully to the fœtal heart-sounds, from which he decides in regard to the advisability of hastening the labor. The placenta is always expressed, and the gngers or hands never passed into the vulva unless absolutely necessary.

The immediately delivery, with all its details, is done by a midwife, and no pulling or tugging or dilating of the os or perineum is attempted at any time. The parts are frequently washed, and the occiput made to hug the pubic arch by pressing the head up, the tissues of the perineum being between the hand and the head.

If a rupture is threatened, the parts are supported by the extended hand and the edge reinforced, if I may use the term, by drawing down more tissues. The cord of the child is tied by passing around it a little rubber tape, and the child is removed from its mother to be weighed, then washed, and measured in every part of its little body, length, breadth and thickness, head, thorax, pelvis and legs. But very little, if any, ergot is given to the mother, and in the course of a few hours she may be seen in the general ward, with her baby in a little cot by her side.

The operating room in this hospital is about fifty feet square. The temperature is raised from 80° to 100° F., and for twenty-four hours previous to a large operation sulphur is burning in the room. All clothes and linen to be used about the patient are fumigated and placed in closed baskets. Instruments are boiled in a ten per cent. solution of carbolic acid and then soaked in a seven per cent. solution. Inside of the raised seats is the operating table. The floor is of stone. Upon one side is a pile of disinfected linen. Next to it, a table containing hæmostatics; next, one upon which all kinds of restoratives are placed, with a hypodermic syringe filled with brandy or ether ready for use. In a remote corner is a receptacle to receive all soiled clothes. Upon the other side of the operating table are all the instruments in trays, and a battery for emergencies is in a convenient position. At one end of the room are two or three places for washing, around which the director of the clinic and his assistants are seen for some time previous to the operation scrubbing their arms and hands and cleaning their nails. Two or three instruments for spraying are placed in an appropriate position, and are worked during the entire operation. It was here that I saw

A CÆSAREAN SECTION IN WHICH BOTH MOTHER AND CHILD WERE SAVED.

The operation was delayed until the *os uteri* was fairly dilated. The operating room had been thoroughly prepared and the woman properly disinfected. An anæsthetic was given and the abdomen repeatedly disinfected, even the hairs along the median line being plucked out. The incisions through the abdominal walls were the usual ones, the only additional procedure being that a thread was passed through the tissues at the upper and lower end of the abdominal opening. The peritoneal covering of the uterus was incised and dissected back about one-third of an inch, so that a small piece of the uterine wall could be removed and the peritoneum folded over the end. The position of the placenta was carefully ascertained and an opening made into the membranes surrounding the child, and the feet seized and the child extracted. It was given at once to a nurse for resuscitation, who shook it violently, its head hanging downwards. The placenta was now taken out of the uterine cavity, and carbolized water was used in great quantities. The incision through the walls of the uterus was very carefully closed with interrupted sutures, then a layer less widely separated, and to keep this secure the chief midwife sewed over and over with catgut sutures the peritoneum, until it seemed absolutely impossible for anything to get into the abdominal cavity from the uterus or from the abdominal cavity into the uterus. The external wound was closed by the usual method. Neither cotton-batting nor any other of the usual dressings were applied on the outside, but a flat bag of shot, weighing from two to six pounds, was laid on the abdomen. Drainage through the vagina ice, over the hypogastrium; the woman made a good recovery.

I had the opportunity of examining this woman's pelvis a few days before the operation. I could feel very plainly the promontory of the sacrum, and should judge that the conjugate was about two and one-half inches. The os was dilated to the size of a half-dollar and craniotomy could have been well performed, but Chiara was intent on trying to save not only the mother's, but also the child's life. He succeeded in doing both.

None of the grave complications which are dreaded were present in this case. The hæmorrhage after the incision through the uterine peritoneum was very slight, and after the extraction of the child only a moderate amount of blood was lost. After the wound in the uterus was closed, friction was made over the organ till it was firmly contracted, the abdominal opening was then closed as I have stated. My notes do not state whether or not a rubber cord was placed around the uterus at the supra-vaginal junction.

EXTIRPATION OF THE SPLEEN.

This abdominal tumor was supposed to be ovar-

ian. Usually a diagnosis is made by tapping and the fluid examined by the microscope, but in this case the precaution was not taken. Upon opening the abdomen, the tumor was found to be a cyst of the spleen filled with echinococci. These were thoroughly scraped out, the cavity cleansed, and the edges of the cyst stitched to the abdominal walls. A glass drain was placed at the bottom of the wound, and it was thoroughly washed out with bichloride and dressed with iodoform, and the woman made a good recovery.

(*To be concluded.*)

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, October 12, 1887.

THE PRESIDENT, J. SOLIS-COHEN, M.D., IN THE CHAIR.

DR. CARL SEILER read a paper on

CHRONIC RHINITIS AS AN ETIOLOGICAL FACTOR OF ACNE OF THE FACE.

For a number of years I have made the observation that acne vulgaris and acne rosacea co-existed frequently with chronic rhinitis, and particularly with the atrophic form of nasal catarrh, but it is only lately that I have come to the conclusion that this form of nasal disease is in many cases of acne the exciting cause. This conclusion may seem far-fetched and perhaps unreasonable at first glance, but I hope to be able to show that there is undoubtedly a close connection between the two affections. For this purpose I will give a short history of a few of the cases which have come under my observation, before entering upon a theoretical discussion of the connection between chronic rhinitis and acne.

Case 1.—J. H., aged 38 years, a broker by profession, consulted me for chronic nasal catarrh. He stated that he had suffered from stoppage of the nose for several years, and that every morning he blew out large scabs. After this his nose felt clear but dry, and he had lost the sense of smell to a very large degree. For two or three years he had noticed a redness of the external integument of the nose, which had become gradually worse, so that at the time I saw him it had spread from the nose to the cheeks, and pimples had made their appearance. The rest of his face was free from pimples or redness. On inquiry as to his habits, he said that he had always been a total abstainer from alcohol in any form, and the redness of his nose was the more annoying to him, as it gave rise to jocose remarks on the part of his friends. His general health was good, and there were no symptoms of gastric disturbance.

On examination, I found the anterior nasal chambers filled with dry scabs of hardened mucus, and having removed them, saw the mucous membrane below them was unusually pale, both on the septum and over the turbinated bones. The lower turbinated bone was barely projecting from the wall of the nose, and the turbinated cavernous tissue apparently absent, as no impression could be made by pressure with the probe. This condition caused the anterior chambers to be abnormally large, so that the posterior wall of the naso-pharynx could easily be illuminated and viewed through the nostrils. Irritation with the probe produced but a very slight amount of moisture to gather around the spot touched, while the whole of the mucous membrane was abnormally dry. There was no odor.

The treatment consisted in cleansing the nasal cavities morning and night with an alkaline wash, and in stimulating the mucous membrane with dilute nitrate of silver in powder, a small quantity of which was blown into the nostrils two or three times a week. In order to keep up the stimulation a tampon of cotton was introduced into the anterior nasal chambers placed against the side of the nose, in place of the atrophied inferior turbinated bone, which tampon was renewed by the patient after the cleansing morning and night. As an application to the skin I prescribed a lotion consisting of alcohol and precipitated sulphur, to be applied every night with a tuft of cotton, and to be washed off in the morning with soap and water.

Under this treatment the acne gradually diminished, and the mucous membrane of the nose became again bathed with secretion, until after a little over three months the redness had entirely disappeared, and the cotton tampons could be dispensed with, because the lower turbinated bones, or at least the cavernous tissue, began again to project into the lumen of the anterior nasal chambers. I saw the patient again three years later, unfortunately without having an opportunity of examining his nose, but he told me that there had been no return of the acne, and that his nose troubled him but little, and then only when he neglected to use the alkaline wash; the sense of smell had also returned to a large degree, but was not as acute as he might wish.

Case 2.—A. L., aged 20 years, machinist, from Wilmington, had had scarlet fever when 10 years old, and since then had suffered from nasal catarrh. At about the age of puberty pimples began to appear on his face, which gradually became larger and more numerous, until, when I saw him, his face and even neck were covered with various sized pustules in different stages of development. In the free spaces between them comedones were numerous, and at the angles of the jaw and on the neck were large scars, forming pockets in some instances, caused by confluent acne pustules. His general health was good. On examination, I found practically the same condition of things as in *Case 1*, except that a disagreeable odor was present, and a perforation of the septum existed. This latter circumstance led me to inquire for syphilitic infection, but I could not elicit anything pointing to the existence of even a taint, but found that he had been in the habit of picking off the scabs of hardened mucus from the lower portion of the septum with his fingernail, and had thus gradually scratched a hole into the cartilaginous partition.

Having at that time a suspicion of the connection

between atrophic rhinitis and acne, I directed, for the sake of experiment, the treatment solely to the nasal chambers, and intentionally made no applications to the acne pustules. The treatment in other respects was the same as that adopted in *Case 1*. On account of the distance of the patient's home from the city, I saw him but seldom, and it was several months before much improvement was noticed. However, in the course of about eighteen months the acne had disappeared entirely, as had also the comedones, and the chronic rhinitis had so far yielded to the treatment that the patient considered himself cured.

Case 3.—Miss E. S., aged 22 years, school-teacher, general health moderately good, has felt a stoppage of the right nostril for some years, while the left nasal chamber was free but very dry, so that she had to use cosmoline or cold cream every night before she felt at all comfortable. In the morning she occasionally expelled a small scab of dried mucus of a yellowish-green color. On her face were numerous pimples and comedones, but distributed more largely on the left side. When asked, she stated that the pimples had made their appearance two or three years ago; had always been more numerous on the left side of her face, and did not seem to have anything to do with her diet, as she had, at the advice of her physician, abstained from various articles of food for considerable periods of time, without apparently producing any effect upon the acne. Her monthly periods did not seem to her to produce any increase in the number of the pimples.

An examination of the nose proved this to be one of those cases which are occasionally met with, in which we find an atrophic condition on one side coexisting with a hypertrophy of the turbinated cavernous tissue on the other. The left nasal chamber being abnormally large, its mucous membrane pale and dry, and the lower turbinated bone hardly visible, presented the same characteristics as described above, and for this condition the same treatment was adopted, viz., stimulation with nitrate of silver and powder, and the cotton tampon after the dried secretion had been removed. The other nasal chamber presented the well-known features of the hypertrophic nasal catarrh, with its injected mucous membrane, from which a copious flow of secretion is poured at the slightest irritation, its projecting turbinated tissue which obstructs the lumen of the lower meatus, and its frequent projections, from the septum. Here an entirely different treatment had to be adopted, which it is needless to describe here in detail; in fact, the two sides of the nose were treated as though they were two separate and distinct cases; the one an atrophic, and the other one of hypertrophic rhinitis. The sulphur and alcoholic lotion was used in this case, as it was important to the patient to get rid of the acne as soon as possible, which happy result was accomplished in a remarkably short time, to her great delight.

The above short notes of three cases will, I think, suffice to show that there is a connection between atrophic rhinitis and acne of the face. Although a large number of such cases could be cited to demonstrate still further this point, I think it would be waste of time to do so, as they are all more or less a repetition of each other.

According to the statements of the different authors on skin diseases, acne occurs with equal frequency in both sexes, and usually makes its appearance at the time of puberty, and is frequent until the age of 30. As predisposing causes are mentioned, gastric disturbances, either lack of or excess of sexual connection, onanism, insomnia, and intemperance, but no mention is made, in any of the works to which I have had access, of atrophic rhinitis as a predisposing or existing cause. That the sexual organs have a great influence upon the production of the disease cannot be doubted, for many cases are cited in which acne showed itself only during pregnancy, or at the menstrual period, in women; and it disappears with the cessation of the practice of self-abuse in boys and men; also, the fact that it is most frequent at puberty, would point in that direction. Some authors lay so much stress upon this that they direct their treatment altogether to the sexual organs, by passing a bougie into the male urethra, and prescribing vaginal douches and medication, having no faith in local applications to the skin of the face.

Speaking of the pathology of acne Veiel says: "The cause of the inflammation is the mechanical irritation by the inspissated secretion, the latter again is due to deficient glandular activity, because, owing to the defective elaboration of sebum, the secretion has time to dry in the efferent duct." Berend explains the new formation of acne efflorescence by assuming that the swelling of the inflammatory areola around the acne pustules and nodules, occludes the efferent channels of neighboring glands. Similar views as to the pathology of the disease are expressed by others. It would seem, therefore, that two factors must act in conjunction with each other to produce acne, the one to act as an obstruction to the efferent channel of the sebaceous glands by the introduction of dirt into it, and the drying of the secretion behind it, producing the so-called comedones, and also a diminution in the activity of the gland itself, which causes an alteration in the consistence and quantity of the secretion, which thus is not able to remove the foreign body in the mouth of the duct by pressure from behind, as undoubtedly occurs in the healthy skin. Thus the retention and accumulation of the secretion causes by pressure a localized inflammation, which is finally relieved by the formation and evacuation of pus. In acne rosacea, the rarer form of the disease, we find no formation of pustules, but simply a general more or less diffused inflammation, which is probably due also to a perverted action of the sebaceous glands, but does not lead to a retention of the secretion.

I have not been able to find an opinion expressed in any of the books as to the direct cause of the glandular irritation, whether it is altogether local, and caused by obstruction of the duct in the formation of comedones, or whether it is due to reflex nervous irritation, or finally is produced by a more

or less general disturbance of the capillary circulation in the skin of the face. The first of these propositions may be at once set down as insufficient to explain the pathological condition, for comedones are frequent in almost every face without being necessarily accompanied by acne. The other two propositions may be considered together, for we cannot have inflammation without disturbance of the circulation, and no disturbance of the circulation without nerve influence.

The above cited predisposing causes clearly indicate that an irritation of the nervous system must exist somewhere, be it in the mucous membrane of the stomach or in the sexual apparatus; which, by reflex, acts upon the easily influenced capillary circulation of the skin of the face and neck, and thus by causing a change in the capillaries around the sebaceous glands causes a perverted action of these glands if it is kept up for any length of time, or if no relief from blood-pressure is afforded. It is my belief that the cavernous tissue covering the turbinated bones provide such a relief, and that this is one of the functions of the erectile tissues of the body. This belief is strengthened by the fact that under mental excitement which causes blushing of the face, the cavernous tissue in the nose swells up, while on the contrary, any emotion which causes paling of the face, the erectile tissue of the turbinated bones becomes paler, and diminishes markedly in bulk, facts well known to every laryngologist. Let this cavernous tissue be absent, or greatly diminished, as is the case in atrophic rhinitis, and very little or no relief is afforded for the excessive blood-pressure in the capillary circulation in the skin of the face, and the result will be acne if any of the predisposing causes be present. In the cases above cited, and in many others under my observation, the acne disappeared *pari passu* with the reformation of the cavernous tissue, and thus these would seem to be of some importance as clinical proofs of this theory.

I am fully aware that a single line of cases observed by one observer, are by no means a sufficient guarantee for the acceptance of a theory, and it will require many more cases observed by many observers, to prove or disprove it. At the same time I cannot but think that atrophic rhinitis may be one of the etiological factors of acne.

DR. C. M. SELTZER said: I wish that the author had been more explicit with reference to the dietetic treatment of these cases. I infer from his remarks that the majority of his patients have been underfed. Most of the cases that I have observed have had an excess of nitrogenous articles, with a lack of sufficient vegetable food. I have obtained the best results by limiting the quantity of nitrogenous food, especially in children, and by increasing the quantity of butter, cream, and fatty articles. I give light suppers, secure abundant sleep, and moderate exercise, especially in gymnastics. Treated in this way, but little medicine is required.

FOREIGN CORRESPONDENCE

LETTER FROM VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Sixth International Congress for Hygiene and Demography in Vienna.

The opening ceremony as well as the first general meeting in connection with the Sixth International Congress for Hygiene and Demography was held in our metropolis on the 26th of September, at 11 o'clock A.M., in the nicely decorated "Musikvereinssaal." Among the distinguished *savants* who were present there were specially to be noticed Virchow, of Berlin; Brouardel, of Paris; Pettenkofer, of Munich; Spencer Wells, of London, etc. The Patron of the Congress, Crown Prince Rudolphus, opened the Congress, which was then addressed by its President, Prof. Ludwig. He emphasized in his eloquent speech the progress which hygiene had made of late years, as only ten years had elapsed since the International Health Congress of Brussels; the Congresses at Paris, Turin, Geneva, the Hague and Vienna rapidly succeeded. The fact that numerous distinguished scholars from almost all the civilized countries of the world had gathered with the purpose of partaking in the deliberations of the Congress was a proof of the recognition of the high importance of this science, a matter which naturally could be easily understood, as hygiene and demography had made it their task to protect mankind against the social evils which, particularly in our century, threatened them to so high a degree. His Imperial Highness had given the Congress a special importance and facilitated its work to a great extent, and taking into consideration the preparatory works of the present Congress, and especially the high scientific position of many of the persons who took part in it, we had every reason to entertain the hope that its works would be crowned with much success.

The Crown Prince said he considered it an honor and a pleasure to have charged himself with the patronage of the Sixth International Congress for Hygiene and Demography. The most precious capital of the State and society was man; each human being represented a certain value, and to preserve man intact for his whole life was not only a command of humanity, but also the duty of all the communities in their proper interest. The participation of so many illustrious persons of all nations and from all countries in the present meeting was an evidence of the vast international importance of hygiene, and he was much satisfied to be able to salute them in this city, which was a centre of lively scientific work and earnest investigation.

After Dr. Köhler, Director of the German Sanitary Board, and Prof. Brouardel, of Paris, had saluted the Crown Prince and the Congress in the name of the countries they represented, the eminent French scholar delivered his lecture on the different modes of the spread of typhoid fever, which contained numerous features of a great interest and a high importance. He successively discussed the different vehicles of the typhoid germ, and treated the influence of the drink-

ing-water and the air on the spread of typhoid epidemics at full length. There was no doubt that the drinking-water played the chief part in the spread of epidemics of typoid fever, and ninety cases out of a hundred were due to this way of propagation. This influence of the drinking-water was a fact beyond any doubt, and confirmed by innumerable direct observations as well as by the results of the bacteriological researches. Among the various examples of direct observation which the author cites for proving the correctness of his assertions, he refers also to the conditions of the water-supply of Paris. The water which supplies this city is furnished by different springs. The Dhuys and the Panne supply the city of Paris with excellent water, but, at certain times, the Marne, the Seine and the canal of Oureq must be resorted to, owing to the want of a sufficient quantity of water for the city. There is, however, a great difference as to the salubrity of the water which is supplied by the Dhuys and the Panne on one side, and that of the now-mentioned rivers on the other side, as these are usually polluted by the dejections of those who live near the rivers and by the seamen. The consequences of the use of these different waters in regard to the propagation of typhoid fever became evident in 1886, when, on the 20th of July, they began to use in Paris the auxiliary water-supply, owing to the insufficiency of the regular one. During the week of July 18–24, 40 persons affected with typhoid fever had been admitted into the hospitals of Paris; from August 1–7 the number increased, and reached 150. When the auxiliary water-supply was discontinued, on August 7, the number of persons affected with typhoid fever rapidly decreased, and from the 15th to the 21st of August only 80 such patients were admitted into the hospitals.

The following example was still more striking: Dr. Régnier, of Paris, had noted the rate of mortality for the year of 1882, in the different caserns of Paris, and could state with all certainty that the new and well-constructed casern of Château-Landon presented a percentage of mortality (typhoid fever) which amounted to 17 per cent. The soldiers of this casern had drunk water which derived its origin from the Marne and which was not filtered. In the old casern of Jean-Jacques Rousseau, however, the soldiers had drunk water which had been furnished by the Panne, and the mortality amounted here to $\frac{7}{10}$ per cent. For 1886, in the casern of Château-Landon, the water of the Marne was substituted for that of the Dhuys, and the mortality of typhoid fever sank, and amounted only to 2 per cent. Only two caserns of Paris were still subjected to typhoid fever epidemics, viz.: those supplied with the water of the Seine.

In discussing the results of the bacteriological investigations as to the influence of the drinking-water on typhoid epidemics, Prof. Brouardel remarked that after the bacillus of typhoid fever had been discovered by Eberth, this microörganism was found in all cases in which persons had been affected with this disease, and missed in all those cases where no typhoid affection was present. This fact had also been confirmed by Koch, Gaffky, Cornil, Babès and other investigators, and there was at present no doubt, either from our direct observations or from the results obtained in the microbiological researches, that the drinking-water was really, and in most of cases, the agent for the propagation of the disease under consideration. The air which we breathed was also a vehicle for the spread of the typhoid fever, as became evident from the numerous striking examples which the distinguished French hygienist quoted in this direction, and as to the propagation of the disease by means of the polluted dresses or the hands of the nurses, he did not wish to insist upon this fact, as it was known to all of us; this influence, however, had the least importance of all. In hygiene, concluded Prof. Brouardel, we ought also to have the courage of deriving practical conclusions from the scientific facts, and taking into account the fact that out of 100 patients affected with typhoid fever, 90 suffered from this disease owing to the use of infected drinking-water, our duty was to supply our whole population with clean and sound water, which was easier for us than if we were to prevent the air from licking up the infected dejections.

Prof. Pettenkofer, of Munich, insisted, in a lecture which was received with much applause, upon the necessity of the teaching of hygiene in the universities and the technical schools. There were chiefly three classes or professions which had to cultivate hygiene, viz.: in the first place the physicians, and besides them, the architects and the engineers; the officers of the public administration, however, had also to recommend an hygienic education. The more these classes will be instructed in hygienic questions, the more everything practical would be done for the welfare of mankind. The lecturer often alluded to the English conditions, and mentioned, among other things, that what the English called "comfort" had an hygienic importance and was worth being imitated. In the seventeenth century, when London had not yet a million of inhabitants, the average mortality was 49 per mille, whereas now, though more than four millions of people were living in the city, its mortality was only 21 per mille; a fact which was due only to the hygienic measures which had been taken by the English and which were strictly observed. During the war in the Crimea, 95,240 French soldiers out of 309,000 who had gone into the war, died—almost the third part of the army; out of this number, 20,000 died from their wounds, whereas 75,000—almost four times as many—succumbed to various diseases, without having been wounded. It was shown that the English had no better lot; the war in the Crimea, however, had caused the English hygienist, Parkes, who had taken part in the whole campaign, as a military physician, to give the hygiene an official position in the administration of the army, and it was on his proposal that the Army Medical School at Netley was created, in which hygiene formed an important part of the curriculum. The other States followed the same example, and fifteen years after the war in the Crimea, in the Franco-German war, the valuable results of these measures could clearly be observed. The total losses of the German armies during that war were 40,888;

out of these 28,282 died from wounds, 346 from other accidents, and 12,282 from various diseases. Whereas in the war of the Crimea, the proportion of the losses in the army which were due to the arms of the enemy, in comparison with those due to diseases, was 100 : 375, the proportion in the Franco-German war was 100 : 43; *i. e.*, eight times the more favorable. This difference in the mortality, said Prof. Pettenkofer, was chiefly due to the hygienic conditions which were adopted in the army, by which numerous cases of abdominal typhoid fever and dysentery were avoided.

The sessions of the four hygienic Sections and of the demographic Section began on the next day, and lasted a whole week. The most important of the reports and discussions were those bearing on cholera, rabies, and anthrax.

Professor Billroth has fully recovered from his late illness, and has begun his course of lectures in the General Hospital. L. L.

MISCELLANEOUS.

THE AMERICAN ASSOCIATION FOR THE CURE OF INEBRIETY will hold its Semi-Annual Meeting at the Turkish Bath Hotel, Columbia Heights, Brooklyn, N. Y., Nov. 9, at 12 M. The following is a list of the papers and addresses to be read. The President's Address on "The Responsibility of the Inebriate," will be delivered by Dr. Joseph Parrish, Burlington, N. J.; "Report of the Colonial Congress on Inebriety," in London, England, by Dr. T. Crothers, Hartford, Conn.; "The Pathology of Inebriety," by Dr. Norman Kerr, London, England; "The Physiology of the Drink Impulse," by Dr. J. T. Searcy, Tuscaloosa, Ala.; "Cocaine Toxæmia," by Dr. J. B. Mattison, Brooklyn, N. Y.; "The Power of Alcoholic Influence," by Dr. T. L. Wright, Bellefontaine, Ohio; "Turkish Baths in Inebriety," by Dr. C. H. Sheperd, Brooklyn, N. Y.; Hygiene in the Treatment of Inebriety," by Dr. Albert Day, Boston, Mass.; "Report on Asylums for Inebriety in New Zealand and Australia," by Dr. D. McGregor, Gov. Inspector, New Zealand; "Sexual Insanity in Inebriety," by Dr. T. D. Crothers, Hartford, Conn.

WASHINGTON OBSTETRICAL AND GYNECOLOGICAL SOCIETY.—At the last meeting of this Society the following officers were elected for the ensuing year: President—Samuel C. Busey, M.D,; Vice Presidents—D. W. Prentiss, M.D. and W. W. Johnston, M.D.; Treasurer—Geo. Byrd Harrison, M.D.; Recording Secretary—Samuel S. Adams, M.D.; Corresponding Secretary—C. Wythe Cook, M.D.

VACCINATION FROM THE BUFFALO.—The experiment has been tried in the Lahore district, India, during last year, of vaccinating from a young buffalo, instead of from a cow, and the results are said to have been "in every way satisfactory."

NEW BOOKS RECEIVED.

Manual of Clinical Diagnosis. By Dr. Otto Siefert and Dr. F. Müller. Third edition revised and corrected by F. Müller. Translated by W. B. Canfield. Illustrated. New York: G. P. Putnam's Sons.

Druitt's Surgeon's Vade-Mecum. Edited by Stanley Boyd. Philadelphia: Lea Bros. & Co.

Transactions of the State Medical Society of Wisconsin, 1887.

Treatise on Human Physiology, for the use of students and practitioners of medicine. By Henry C. Chapman, M.D., Prof. Institute of Medicine and Medical Jurisprudence, Jefferson Medical College. Philadelphia: Lea Bros. & Co.

Syphilis. By Jonathan Hutchinson, F.R.S., LL.D. With Chromo-Lithographs. Published by Lea Brothers & Co., Philadelphia.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 22, 1887, TO OCTOBER 28, 1887.

Major Chas. R. Greenleaf, Surgeon, will proceed from this city to the places hereinafter named, in the order in which they are named, for the purpose of investigating the methods of examining recruits at the depots and rendezvous located thereat, and of instructing recruiting officers in matters pertaining to such examinations: Baltimore, Md.; Philadelphia, Pa.; Camden, N. J.; New York City and Davids Island, N. Y.; Boston, Mass.; Portland, Me.; Albany and Buffalo, N. Y.; Cleveland, O.; Detroit, Mich.; Chicago, Ill.; Milwaukee, Wis.; St. Paul, Minn.; Jefferson Bks. and St. Louis, Mo.; Cincinnati and Columbus, O.; and Pittsburg, Pa. S. O. 248, A. G. O., October 25, 1887.

Major P. J. A. Cleary, Surgeon, ordered to proceed from Ft. Huachuca to Ft. McDowell and report to the commanding officer for duty as Post Surgeon. S. O. 111, Dept. Ariz., October 10, 1887.

Capt. Chas. Richard, Asst. Surgeon, granted leave of absence for one month, to take effect when his services can be spared by his post commander. S. O. 247, A. G. O., October 22. 1887.

Capt. H. G. Burton, Asst. Surgeon, ordered from Plattsburg Bks., N. Y., to Watervliet Arsenal, N, Y.

Capt. J. C. Merrill, Asst. Surgeon, ordered from Watervliet Arsenal, N. Y., to Frankford Arsenal, Pa. S. O. 249, A. G. O., October 26, 1887.

First Lieut. Nathan S. Jarvis, Asst. Surgeon, ordered for field duty in Dept. of the Platte. S. O. 246, A. G. O., October 21, 1887.

First Lieut. Nathan S. Jarvis, Asst. Surgeon, ordered from Dept. Platte to Dept. Mo., for duty in the field. S. O. 249, A. G. O., October 26, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING OCTOBER 29, 1887.

Medical Inspector N. L. Bates, ordered to hold himself in readiness for orders to the "Trenton."

Asst. Surgeon F. A. Hesler, ordered to examination for promotion.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE TWO WEEKS ENDING OCTOBER 29, 1887.

P. A. Surgeon Bailhache, to proceed to Buffalo, N, Y., Erie, Pa., Ashtabula, Cleveland, Sandusky and Toledo, O., as inspector. October 4, 1887.

Surgeon C. S. D. Fessenden, detailed as chairman of Board for the physical examination of cadets, Revenue Marine Service. October 15, 1887. To proceed to Cape Charles Quarantine Station as inspector. October 26, 1887.

Surgeon H. W. Sawtelle, detailed as chairman of Board for the physical examination of officers, Revenue Marine Service. October 27, 1887.

P. A. Surgeon Fairfax Irwin, to inspect unserviceable property at Boston, Mass., and Portland, Me.; to proceed to Vineyard Haven and New Bedford, Mass., as inspector. October 8, 1887.

P. A. Surgeon F. W. Mead, detailed as recorder of Board for the physical examination of cadets, Revenue Marine Service. October 15, 1887.

P. A. Surgeon J. H. White, leave of absence extended four days. October 21, 1887.

Asst. Surgeon P. M. Carrington, detailed as recorder of Board for the physical examination of officers, Revenue Marine Service. October 27, 1887.

Asst. Surgeon J. B. Fattic, granted leave of absence for seven days. October 28, 1887.

Asst. Surgeon W. J. Pettus, when relieved at Savannah, Ga., to proceed to Galveston, Tex., and assume charge of the Service. October 17, 1887. Granted leave of absence for thirty days. October 21, 1887.

Asst. Surgeon J. J. Kinyoun, granted leave of absence for fifteen days. October 19, 1887.